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Draft Groundwater Monitoring Report
Long-Term Monitoring Program
Year 7

Federal Creosote Superfund Site

Operable Unit 3

Manville, New Jersey

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CDM Smith

Table of Contents

Acronyms

ABS	absolute difference
af	artificial fill
BTEX	benzene, toluene, ethylbenzene, and xylenes
°C	degree Celsius
CDM Smith	CDM Federal Programs Corporation
COCs	contaminants of concern
CLP	Contract Laboratory Program
DESA	Division of Environmental Science and Assessment
DMC	deuterated monitoring compounds
DNAPL	dense non aqueous phase liquid
DO	dissolved oxygen
EPA	United State Environmental Protection Agency
FB	field blank
FCR	field change request
Fe	iron
GWQS	Groundwater Quality Standards
IDW	investigation derived waste
LMAS	"leaky" multi-unit aquifer system
MEE	methane, ethane, and ethene
MW	monitoring well
mg/L	milligram per liter
mL/min	milliliter per minute
Mn	manganese
MS/MSD	matrix spike and matrix spike duplicates
msl	mean sea level
MW	monitoring well
NA	natural attenuation
NAPL	non-aqueous phase liquid
NJDEP	New Jersey Department of Environmental Protection
NJ GWQS	New Jersey Class IIA Groundwater Quality Standards
No.	number
NPL	National Priorities List
NTU	nephelometric turbidity units
OU	Operable Unit
ORP	oxidation-reduction potential
PAHs	polycyclic aromatic hydrocarbons
PCE	tetrachloroethene
QA/QC	quality assurance and quality control
Qal	alluvium
ROD	record of decision
RI	Remedial Investigation
RPDs	relative percent differences
RRF	relative response factor
SAP	Sampling and Analysis Plan
SIM	selected ion monitoring

site	Federal Creosote Superfund Site
SVOC	semi-volatile organic compound
TCE	trichloroethene
TB	trip blank
µg/L	micrograms per liter
µm	micrometer
USACE	United States Army Corps of Engineers
VOC	volatile organic compound
WAD	Work Authorization Document
%D	percent difference

Section 1 Introduction

Under the United States Army Corps of Engineers (USACE), Kansas City District, Contract W912DQ-08-D-0018, Task Order 3, Work Authorization Document (WAD) 12, CDM Federal Programs Corporation (CDM Smith) was tasked with providing groundwater monitoring services for Operable Unit (OU) 3 at the Federal Creosote Superfund Site (site) located in the Borough of Manville, New Jersey. The services authorized in WAD 12 include continued implementation of the groundwater remedy for OU3, which is long-term monitoring and institutional controls.

In 2005, CDM Smith submitted a Final Sampling and Analysis Plan (SAP) (CDM 2005), which described the field activities and the quality assurance/quality control (QA/QC) program to be used for the long-term monitoring program. Based on United States Environmental Protection Agency's (EPA) and USACE's approval, CDM Smith collected two rounds of groundwater samples from 30 monitoring wells (MWs) in 2005 and 2006. The results were reported in the Year-1 (Baseline) and Year-2 Groundwater Sampling Reports (CDM 2007a, CDM 2007b), respectively. Based on the findings of the two rounds of sampling, CDM Smith submitted a SAP Addendum in 2007 (CDM 2007c), which presented the rationale, location, and screen intervals for 18 new MWs. These 18 new MWs were installed in summer 2007. In November, 2007, CDM Smith collected a full round of groundwater samples from 48 MWs, and the results were presented in the Year-3 Groundwater Sampling Report (CDM 2009a). In 2008, based on groundwater contaminant distribution and well locations, EPA reduced the total number of wells for future monitoring to 28. These 28 wells were sampled in November 2008, and results reported in the Year-4 Groundwater Sampling Report (CDM 2009b). The 2008 data from MW-111S showed an increasing trend of contamination, therefore, EPA decided to add MW-111I in the monitoring network. A total of 29 wells were sampled in October 2009. In 2010, MW-111D was added to the monitoring network to determine if the contamination has migrated to the deep bedrock. This monitoring approach was continued in the 2011 sampling event.

This report is the seventh annual report for the long-term groundwater monitoring program. It presents the field activities and the results of the October 2011 groundwater sampling event, and discusses the extent of groundwater contamination and the possible biological degradation of creosote. This report is organized into four sections:

- Section 1 – Introduction
- Section 2 – Field Activities
- Section 3 – Field Activity Results

- Section 4 – References

1.1 Site Description and History

The site is a 137-property residential community known as the Claremont Development and portions of a former, now demolished commercial shopping mall known as Rustic Mall, located in the Borough of Manville, Somerset County, New Jersey (**Figure 1-1**). The site covers about 50 acres and is bordered to the north by the Norfolk-Southern Railroad, to the east and south by the CSX Railroad, and to the west by commercial and residential properties

The site was formerly owned and occupied by the Federal Creosoting Company, which operated from approximately the 1910s to 1957. The plant operated as a wood treatment facility that used creosote as a preservative. Two unlined lagoons and associated canals receiving creosote wastes were located in the north central and southeast sections of the site. The lagoon in the north central section of the site and its associated canal are referred to as Lagoon A and Canal A, respectively. The southern lagoon and canal are referred to as Lagoon B and Canal B, respectively (**Figure 1-2**). Additionally, several impoundments, standing liquid areas, and stained areas were identified northeast of the main treatment facility along the western edge of the Claremont Development.

In the early 1960s, 15 acres of the property were developed for commercial and retail use. In the mid-1960s, 35 acres were developed for single family housing, known as the Claremont Development. The lagoons and the canals were reportedly filled in without removing the creosote waste.

The contamination at the site was discovered in April 1996. The New Jersey Department of Environmental Protection (NJDEP) responded to an incident involving the discharge of an unknown liquid from a sump, which was located at one of the Claremont Development residences on Valerie Drive. In 1997, EPA initiated an investigation of the site to locate possible creosote contamination and divided the site into OUs to expedite the investigation and remediation. On January 19, 1999, the site was listed on the National Priorities List (NPL).

Under OU1 and OU2, EPA removed source material and contaminated surface and subsurface soil at the former lagoons, canals, and drip areas on residential properties at the Claremont Development. In September 2002, EPA issued a Record of Decision (ROD) for OU3 which addresses soils at the Rustic Mall and the site-wide groundwater contamination. Under the ROD, the selected remedy calls for excavation and offsite treatment/disposal of contaminated soil, and long-term monitoring with institutional controls for site-wide groundwater. Contaminated soil removal at Rustic Mall was completed in December 2007. Independent of the remedial action, the Rustic Mall property owner razed the buildings during remediation.

1.2 Geology and Hydrogeology

During the Remedial Investigation (RI) for OU2, a comprehensive study of the site geology and hydrogeology was performed. The information is summarized below.

1.2.1 Regional Geology and Hydrogeology

The surficial unconsolidated overburden deposits in the site vicinity are of glacial, interglacial, and post-glacial origin, principally deposited by fast-flowing rivers and streams carrying melt water away from glaciers which advanced as far south as northern New Jersey during the Pleistocene epoch. At least two glacio-fluvial sand and gravel terraces have been mapped by Stanford (1992) in the Raritan Valley. The Upper Raritan Terrace Deposits are found above an elevation of 50 feet above mean sea level (msl), are of Middle Pleistocene age, and form a terrace about 20 to 30 feet above the present Raritan River alluvial plain. The deposits are remnants of interglacial fluvial deposits that were preserved after 60 to 100 feet of valley incision into bedrock occurred in both main and tributary valleys during the subsequent Illinoian glacial event. Regionally, these deposits consist of sand and pebble gravel, with minor silt, clay and cobbles. Total thicknesses in this unit of up to 50 feet have been reported (Stanford 1992).

The subsequent Millstone Terrace Deposits (elevation 40 to 50 feet above msl) surround the Upper Raritan Terrace. Stanford (1992) correlates the Millstone Terrace with the Middle to Late Pleistocene Sangamon glacial event. Deposits with lithology similar to the Upper Raritan Terrace are up to 30 feet thick, forming a terrace about 10 to 15 feet above the present floodplain of the Millstone River.

Quaternary-age alluvial deposits, consisting of up to 20 feet of sand, silt, and clay with minor organic material, have subsequently been deposited in the river valley between the Millstone Terrace deposits and Raritan Terrace deposits. This unit is referred to as alluvium (Qal) by Stanford (1992). There are also areas of man-made infilling that are mapped as artificial fill (af).

Underlying the overburden deposits is a thick succession of Upper Triassic shales of the Passaic Formation. The Passaic Formation is part of a very thick stratigraphic succession (more than 15,000 feet) that constitutes the Newark Supergroup (Froelich and Olsen 1985), consisting of non-marine sedimentary rocks and igneous rocks ranging in age from Late Triassic to Early Jurassic. The Newark Supergroup sediments were deposited in the Newark Basin, extending along a southwestern trend from Rockland County, New York, across central New Jersey, to Lancaster County, Pennsylvania. The Newark Basin is a structural depression formed during the extension and downfaulting on a series of major faults along the passive margin of the early North Atlantic Ocean basin (Manspeizer 1988). The Newark Basin is one of a series of elongate rift basins that exist along almost 600 miles of the northeastern margin of North America, similar to the configuration and depositional environment found in the present-day East African Rift system.

The Newark Basin was progressively infilled by fine-grained lake deposits. These deposits were derived from the erosion of Precambrian and Paleozoic basement rocks exposed to the northwest of the Newark Basin beyond basin boundary faults. To the southeast, the Newark Basin strata are unconformably overlain by Cretaceous sediments of the Coastal Plain. During and after the deposition of the lake sediments, border faults along the eastern margin of the basin were active, gently folding the basin strata, creating folds with axes oriented northwest to west. The gently northward-plunging axis of the Watchung Syncline, located immediately north of the site, is an example of one such basin fold.

The site is just to the south of the southern bedrock expression of the Watchung Syncline, a broad shallowly northward plunging syncline recognizable in outcrop by the clearly visible hook-shaped outcrop pattern of the First Watchung Mountain basalt lava flow to the north of the site. The site is located near the axis of the synclinal cross fold mapped to the north of the site. Because of folding related to the syncline, bedding strike to the east and northeast of the site is east-northeast and bedding strike to the west and northwest of the site is west-northwest (Parker 1993). Bedding dip to the east and northeast of the site is generally northwest and bedding dip to the west and northwest of the site is generally northeast. Dip angles range from 5 to 12 degrees.

The influence of the syncline is apparent in bedding strike and dip data collected at the site where strike moves from east-west on the west side of the site to northeast/southwest on the west end of the site. Bedding strike and dip were observed in four boreholes at the site, MW-111D, MW-114D, MW-115D, and MW-118D, using an acoustic televiewer. The strike and dip symbols are shown on **Figure 1-2**. Bedding strike ranges from N86W at well MW-111D in the southwest corner of the site, to N83E at well MW-114D near the middle of the site, to N62E at well MW-115D at the northeast corner of the site. Strike at well MW-118D to the north of the site is N76E. Dips range from 7 to 9 degrees to the north-northwest or north-northeast.

The Passaic Formation (Olsen 1980), formerly mapped as the lower part of the Brunswick Formation (Kümmel 1897) (a formation name still widely used by well drillers), is predominantly composed of reddish-brown lacustrine siltstone, mudstone, shale and occasional sandstone of fluvial origin. The Passaic Formation is the thickest and most widespread formation in the Newark Basin, having an estimated thickness of 9,000 feet in the vicinity of the site (Olsen et al., 1996).

Rocks of the Passaic Formation typically contain two prominent fracture types: (1) bedding-plane partings and (2) high angle fractures. Bedding-plane partings are the most numerous and have an average strike of N84° W (84 degrees west of true north) and dip of 20° N. The high-angle fractures are oriented subparallel to these features, with an average strike of N79° W and a dip of 71° S, making the two sets of planar fracture roughly orthogonal (Morin et al., 1996). Their intersections form linear features that also retain the approximately east-west strike. This phenomenon has important implications regarding groundwater flow through the formation. Secondary cementation of the fractures by gypsum, especially in bedding-plane partings, has occurred throughout the Passaic Formation. Down hole video logs suggest gypsum was deposited by gypsum-laden groundwater ascending along bedding partings as the partings became enlarged by stress relief resulting from erosional or glacial unloading (Michaliski and Britton 1996). Post-diagenetic dissolution of the gypsum cement has occurred within the formation at depths shallower than approximately 200 feet.

In the site's vicinity, the interbedded water-bearing units and aquitards of the Passaic Formation are part of a homoclinal structure with a typical dip in the range of 5 to 25 degrees to the north, although bedding strikes vary slightly within the axis of the nearby Watchung Syncline. The shale has little primary permeability; the original primary porosity having been reduced by compaction and cementation. Virtually all groundwater movement in the Passaic aquifer system occurs through intersecting fracture sets and along partings between bedding planes. The Passaic aquifer is strongly anisotropic, where the axis of maximum hydraulic conductivity generally is parallel to the strike of bedding partings and high-angle fractures (Michalski 1990). The least permeable axis is oriented perpendicular to bedding.

1.2.2 Site Geology

The site is underlain by approximately 25 to 35 feet of unconsolidated sediments of glacio-fluvial origin, which in turn are underlain by the Late Triassic siltstone and shale of the Passaic Formation. The soil boring lithologic descriptions suggest the following sequence (from the ground surface to the bedrock surface) of deposits to be typical at the site: fill, sand and gravel, silt and clay, sand and gravel (with some silt and clay layers and seams), and weathered siltstone and shale (bedrock). The weathered zone of reddish-brown shale retains the two principal fracture sets; however, the weathering processes of the shale results in the reduction of primary fracture permeability by clogging more open fractures with clay (Michaliski 1990). Therefore, the generally smaller, near vertical fracture set may tend to remain more open in the weathered zone compared with bedding partings. This weathered zone is approximately 10 feet thick.

Extensive bedrock fracturing begins several feet below the top of the bedrock surface. Since the elevation of the bedrock surface does not significantly vary, the elevation of the fracturing is relatively consistent throughout the site. The extensive bedrock fracturing begins at an elevation of between five and 10 feet below msl and becomes more prevalent with depth. The dip angles associated with these fractures are not consistent between wells and may range from 5 to 60 degrees at the same elevations. At depths ranging from 80 to 208 feet, gypsum in-filling of fractures begins, reducing permeability to essentially zero.

During the RI, two geological cross sections, A-A' and B-B', were prepared. The locations of these cross sections are shown on **Figure 1-3**. The cross sections were modified and the locations of the wells installed in 2007 were added. The updated sections are presented in **Figures 1-4** and **1-5**.

1.2.3 Site Hydrogeology

A multi-phased investigation of the site was conducted to evaluate the occurrence, quality, and flow of groundwater in the overburden and bedrock aquifer (CDM 2001). In general, the weathering processes in shales result in the reduction of primary fracture permeability by clogging the more conductive fractures. The lowest hydraulic conductivity values come from shallow wells that are completed in aquitard units within the weathered zone. Although weathering tends to reduce the permeability, fractures formed during the weathering process may augment the storage potential of the weathered zone. As a result, pockets of perched water often form within and above the weathered zone. Strong downward vertical gradients can develop across the weathered zone in recharge areas. If the ground water stored within the weathered zone is contaminated, downward migration of contaminants through wells open across the zone can carry contamination to deeper aquifer zones.

Below the intensely weathered shallow zone, deep MWs exhibit consistently high hydraulic conductivity and bulk permeability. However, significant head differences can exist between individual water-bearing units due to anisotropies within the fractured bedrock. Bedding plane partings generally exhibit transmissivities that average twice that of high-angle fractures but decrease in size and number with increasing depth. The magnitude and frequency of high-angle fractures show no apparent dependence upon depth. Consequently, fluid flow near the surface is controlled primarily by the highly transmissive, subhorizontal bedding plane partings. As depth increases, the high-angle fractures apparently become more dominant hydrologically (Morin et al. 1996). Boreholes that have not yielded water in the first 500 feet of drilling are not likely to penetrate water-yielding zones at deeper levels (Swain et al. 1992).

Groundwater at the site occurs in the overburden and the bedrock units under unconfined and semi-confined conditions. Localized perched groundwater zones are common in the overburden on top of the silt and clay layer that occurs at approximately six to ten feet below the surface at the site. For the purposes of this analysis, the groundwater has been separated into two units, the overburden unit and the bedrock unit. However, site data (e.g., contamination is found in both the overburden and bedrock) indicate that these units are hydrologically connected.

The hydrogeological analysis presented in the RI concluded that groundwater flow in the overburden is predominantly from the site to the southeast, toward the Millstone River. In the bedrock aquifer, a groundwater divide exists between MW-116I and the monitoring well MW-118 cluster. Groundwater gradients to the northwest of the divide are toward the Raritan River and Manville municipal wells C1 and C2. Groundwater gradients to the southeast of the divide are toward the Millstone River. Vertical groundwater gradients are downward near the divide and upward near the Millstone River.

1.2.4 Site Conceptual Hydrogeologic Model

A commonly accepted conceptual model of the Passaic aquifer is a “leaky” multi-unit aquifer system (LMAS) (Michalski 1990; Michalski and Klepp 1990; Michalski and Britton 1996). Below a lower impermeability weathered zone, the LMAS consists of thin water-bearing units and much thicker, strata-bound, intervening aquitards. The pervasive high-angle fractures impart a leaky character to the entire sequence. Groundwater flow down-dip along bedding partings is limited to the depth at which bedding partings are either closed due to lithostatic pressure or by the depth at which gypsum cementation has infilled the fissures, thus preventing further down-dip flow. The prevailing groundwater flow direction within individual aquifer units tends to be subparallel to strike of beds (Michalski and Britton 1996). The strongly cyclic nature of the Passaic Formation lithostratigraphy has resulted in multiple repetitions of similar sequences at consistent intervals. Multiple aquifer/aquitard couplets therefore can be anticipated in the aquifer system.

Evidence from the packer testing conducted as part of the RI indicates that flow occurs along both strike and along dip, as well as between areas that do not seem to fall along either strike or dip. The reaction of shallow wells to pumping of deep units is indicative of flow along joints and fractures. The prevalent high-angle fractures in the bedrock are associated with some of the zones of highest conductivity in the packer testing. The infilling of fractures with gypsum effectively reduces the hydraulic conductivity of the rock to zero (or near zero). Therefore, the groundwater flow at this site is more likely influenced by prevalent vertical joints and fractures in the rock, especially in the area of the Lost Valley. However, partings along bedding planes still provide a pathway for groundwater flow.

Contamination generated from creosote in the subsurface takes two forms: non-aqueous phase liquid (NAPL) phase and dissolved phase. Because creosote has higher density than water, it is also called dense NAPL (DNAPL). Movement of NAPL phase is independent of groundwater flow, instead being determined by gravity and interfacial tensions. The downward movement of NAPL is retarded by fine-grained units. NAPL moves along, around, and through breaks in discontinuous silts and clays. NAPL movement is also impeded by glacial till and weathered bedrock. Once NAPL has reached bedrock, it flows through vertical fractures, where present, into deeper bedrock. The potential downward movement of NAPL in bedrock is bounded by gypsum infilling of fractures, which effectively reduces the NAPL permeability of the bedrock to zero (or near zero). The dissolved phase of contamination moves with the groundwater gradient. As expected, the highest levels of contamination develop down gradient of the source areas and the areas near free product in the bedrock. Movement of dissolved phase can be retarded by sorption to aquifer solids. Retardation affects each compound according to its affinity for organic carbon, bound to aquifer solids.

1.3 Extent of Groundwater Contamination Found in Remedial Investigation

During the RI in 1999 and 2000, creosote-related groundwater contamination was detected both in overburden and in bedrock MWs. The most frequently detected contaminants were polycyclic aromatic hydrocarbons (PAHs) and benzene. High concentrations of contaminants were detected in the vicinity of former Lagoons A and B (**Figure 1-2**). Groundwater contamination was largely restricted to the vicinity of the former lagoons (CDM 2001). Subsurface transport of PAHs and benzene is retarded by various natural attenuation mechanisms including sorption and biotransformation.

Excavation at OU1 and OU2 has removed the source material that contributed to overburden groundwater contamination. MW-1S, MW-11S, MW-12S, MW-101S, MW-102S, MW-104S, and MW-120S were abandoned during remedial construction. Free phase creosote observed in MW-12S during the RI has been excavated and treated off site. In the vicinity of Lagoon B, free phase creosote was observed in MW-7S and high concentrations of PAHs and benzene were detected in MW-6S.

In bedrock, free phase creosote DNAPL was observed in several intermediate and deep MWs (MW-2D, MW-2I, MW-5I, and MW-116I). Elevated concentrations of contaminants were also detected in MW-3I and MW-12I; a low concentration of benzene was detected in MW-114D. Low concentrations of PAHs were detected in MW-114I and MW-114D. MW-2I, MW-2D, MW-3I, and MW-12I were abandoned during remedial construction.

1.4 Extent of Groundwater Contamination 2010

Since 2005, groundwater samples were collected annually from selected MWs to evaluate the extent and changes of groundwater contamination at the site. The extent of groundwater contamination was generally stable from 2005 to 2010. Therefore, results from 2010 are discussed below.

The 2010 groundwater sampling event included collecting groundwater samples from 30 MWs strategically located to monitor the source area and the migration of contamination in the overburden and the bedrock aquifers.

The creosote-related volatile organic compounds (VOCs) contaminants detected in 2010 are benzene, toluene, ethylbenzene, xylene (BTEX), styrene, and isopropylbenzene. Among the creosote-related semi-volatile organic compounds (SVOCs), 15 (4-methylphenol, naphthalene, 2-methylnaphthalene, acenaphthene, dibenzofuran, fluorene, phenanthrene, carbazole, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and dibenzo(a,h)anthracene) were detected at concentrations exceeding the site-specific screening criteria.

Similar to the previous years, in both the overburden aquifer and the bedrock aquifer, free phase creosote or high contaminant concentrations indicating the presence of free phase creosote were detected in MWs in the vicinity of the former Lagoon A (MW-2RS, MW-2RI) and Lagoon B (MW-6S, MW-7S, and MW-5I). The DNAPL and highly contaminated pore water could serve as the sources of groundwater contamination. Outside these two source areas, creosote-related VOCs and SVOCs were only detected at a limited number of wells, and contaminant concentrations were significantly lower than concentrations in the source areas. In the area outside former Lagoon A, creosote-related contaminants (carbazole) were detected at concentrations exceeding the site-specific screening criteria in MW-12RS, and MW-116I. Creosote-related contaminants were also detected in MW-1RS, MW-104-RS, and the MW-124 well cluster at trace concentrations. In the area outside former Lagoon B, creosote-related contaminants were detected in MW-114S and MW-125I at trace concentrations. Creosote-related contaminants were also detected in MW-111S, located at the west end of former Canal B, with phenanthrene, dibenzofuran and carbazole exceeding site specific criteria. Overall, creosote-related contaminants were only observed within very limited areas near creosote sources.

Section 2
Field Activities

The objective of the seventh groundwater sampling round was to provide annual groundwater monitoring results for the long-term groundwater monitoring program. A round of synoptic water levels was collected from all available monitoring wells for hydraulic analysis. Thirty wells were sampled and analyzed for Trace VOCs, SVOCs, iron, manganese, and natural attenuation (NA) parameters: alkalinity, nitrate/nitrite, sulfate, sulfide, and methane, ethane, and ethene (MEE). Ferrous iron was measured in the field. A well condition survey was also conducted during field sampling.

2.1 Synoptic Water Level Measurements

The synoptic water level measurement event took place on October 12, 2011. CDM Smith collected one round of synoptic water level measurements from all 58 monitoring wells and well T-1 present at the site. CDM Smith personnel used an electronic water level meter at each well to measure the depth to water from a surveyed reference point marked on the top of the inner casing.

Table 3-1 presents the water levels collected during this round. Site monitoring well locations are depicted on **Figure 1-2**. Well construction details are provided in **Table 2-1**.

The synoptic water level measurements were used to estimate the direction of the groundwater flow gradient in the overburden aquifer as well as in the intermediate and deep portions of the bedrock aquifer.

2.2 Groundwater Sampling

Thirty monitoring wells were sampled between October 17 and 25, 2011 during the seventh groundwater sampling round. The wells consisted of 15 overburden wells, 9 intermediate bedrock wells, and 6 deep bedrock wells. The wells were selected by EPA based on historical analytical results and well locations. Groundwater samples were collected from background wells and the least contaminated wells first and then progressed towards the most contaminated wells to minimize the potential of cross contamination.

EPA Region 2 low-flow groundwater sampling procedures were followed during groundwater sampling. At each well location, depth to water was first measured, and then a 2-inch diameter submersible pump (2-inch Grundfos Redi-Flo2 pump) was lowered to the middle of the screen interval or the middle of the water column, if the water level was lower than the top of the screen. The pumping rate was maintained between 200 and 500 milliliter per minute (mL/min), and the drawdown was kept within 0.3 foot as required by the sampling procedure. The pumped groundwater passed through a flow-through cell equipped with an YSI 650 MSD meter which recorded the following parameters every three to five minutes: pH, conductivity, dissolved oxygen (DO), oxidation-reduction potential (ORP), and temperature. Effluent samples from the flow-through cell were also taken every five minutes and measured for turbidity using a Lamotte 2020 Turbidity meter. Well purging continued until these groundwater quality parameters stabilized. After the stability criteria were satisfied, groundwater samples were collected.

Groundwater samples were analyzed for trace VOCs, low SVOCs, iron, manganese, and NA parameters. The SVOC SIM (selected ion monitoring) analysis was not performed this round in accordance with Field Change Request (FCR) 5, found in **Appendix A**. **Table 2-2** summarizes the samples collected and analyses performed. The analytical methods for each analysis are listed in **Table 2-3**. Ferrous iron was analyzed on-site following HACH method 8146. Groundwater samples for trace VOCS and SVOCs were analyzed though the EPA's Contract Laboratory Program (CLP) laboratory, Chemtech Consulting Group, located in Mountainside, NJ. Samples for iron and manganese were sent to EPA's CLP laboratory, Bonner Analytical Testing Company, located in Hattiesburg, MS. Samples for MEE and natural attenuation parameters were analyzed by EPA Division of Environmental Science and Assessment (DESA) laboratory located in Edison, New Jersey.

Two field duplicates were collected. MW-602S-7 was a duplicate of MW-2RS-Y7, and MW-614D-Y7 was a duplicate of MW-114D-Y7. One field blank (FB) (rinsate blank) was collected every day and analyzed for the same parameters as the environmental samples. Trip blanks (TB) were shipped in each cooler containing samples for VOC or MEE analyses. Field blank, trip blank and temperature blank samples were sent together with environmental samples at the end of every day.

The investigation derived waste (IDW) and purged groundwater were collected and stored in three 55-gallon drums. CEMCO, CDM Smith's IDW disposal subcontractor, prepared the waste manifest for EPA's signature. Based on the waste characterization sample results from previous years, which in every case determined the purge water to be non-hazardous, the purged water was categorized as non-hazardous liquid, and was transported by CEMCO to Cycle-Chem, a treatment and disposal facility located in Elizabeth, NJ for proper disposal.

2.3 Well Condition Survey

In addition to the field sampling effort, EPA requested that CDM conduct an inventory of all monitoring wells at the Federal Creosote site. EPA provided an electronic template of an inventory checklist to be completed for each well. The checklist contains basic information regarding the facility (site), well location, and well construction details, which were input in advance of the field inventory. Well condition was recorded during the sampling activity at each well. For wells that were not sampled, well condition was recorded during the synoptic water level measurement event. Monitoring well inspection checklists for each well are located in **Appendix B**.

Section 3
Field Activities Results

The results of field activities discussed in this report include collection of groundwater samples from 30 wells, synoptic water level measurements from 59 wells, and well condition survey conducted in October of 2011. The 2011 sampling event is the seventh year of the long-term monitoring program.

3.1 Potentiometric Surfaces

CDM Smith collected one round of synoptic water level measurements from 59 monitoring wells on October 12, 2011. The results are presented in **Table 3-1. Figures 3-1, 3-2,** and **3-3** display the potentiometric surfaces within three portions of the subsurface: overburden, fractured bedrock at elevation 10 feet below msl (intermediate), and fractured bedrock at 120 feet below msl (deep). The two bedrock zones were chosen based on examination of geophysical logs during the RI and correspond to portions of the borehole where abundant low angle fractures were encountered. The fracture zones at 10 and 120 feet below msl display little hydraulic connectivity and were contoured separately, following the convention begun with the RI. The resulting potentiometric surfaces assist in evaluating groundwater movement. However, within a fractured rock aquifer, groundwater flow direction cannot be assumed to be perpendicular to contours of equal hydraulic head. A degree of hydraulic directionality is typical in the Passaic Formation, with interconnected fractures that vary in strike and dip. The resulting flow paths are typically sub-perpendicular to contours of equal hydraulic head.

A comparison of potentiometric surfaces generated from the October 2011 and January 2011 data revealed groundwater elevations measuring several feet higher during the October 2011 gauging event, as compared to January 2011 (**Appendix C**). The elevated groundwater levels can be attributed to the record precipitation that fell across New Jersey during the calendar year 2011. Nearby Newark, New Jersey received 69.91 inches of precipitation in 2011, over 23 inches above normal (NOAA 2011). Inferred groundwater flow direction was primarily unchanged.

The overburden potentiometric surfaces generated from both the January and October 2011 data indicate that the groundwater gradient in the overburden beneath the site is predominantly toward the southeast and the Millstone River. Near the Raritan River it is expected that a component of flow is directed towards the river, but there are no monitoring wells available to verify this expectation.

Groundwater flow in the intermediate bedrock is generally to the southeast across the site. This direction is consistent with a preferential flow path sub-parallel to bedding strike and towards the Millstone and Raritan Rivers, which are local groundwater discharge points.

As flow approaches the confluence of the Raritan and Millstone Rivers, it begins to diverge in the vicinity of the MW-113 well cluster. Downgradient of MW-113I there is a groundwater divide oriented northwest to southeast.

Groundwater flow in the deep bedrock is generally to the east across the northern portion of the site and southeast across the rest of the site. This direction is consistent with a preferential flow path sub-parallel to bedding strike and towards the Millstone and Raritan Rivers, local groundwater discharge pointsAs flow approaches the confluence of the Raritan and Millstone Rivers it begins to diverge in the vicinity of the MW-110 well cluster, and a groundwater divide develops oriented west-southwest to east-northeast. South of this divide flow is to the southeast and east towards the Millstone River. North of the divide flow is to the east-northeast toward the Raritan River.

The hydraulic gradient across the site, determined from the January 2011 data, is 1.4x10-3 foot per foot at the -10 foot elevation and 1.5 x10-3 foot per foot at the -120 foot elevation. October 2011 data indicate an increase in the hydraulic gradient across the site to 1.8x10-3 foot per foot at the -10 foot elevation and 2.7 x10-3 foot per foot at the -120 foot elevation. The difference between the gradients measured during January and October may be related to variation in recharge.

3.2 Groundwater Sampling Results

Analytical sampling results were compared to site-specific screening criteria. The site-specific groundwater screening criteria were developed based on the New Jersey Class IIA Groundwater Quality Standards (NJ GWQS), as amended on July 22, 2010 and the remedial goals contained in the OU3 ROD. New Jersey drinking water standards are also considered, however, the GWQS are in all cases as stringent as or more stringent than the New Jersey drinking water standards. Nine compounds were listed as contaminants of concern (COCs) in the OU3 ROD. They are benzo(a)pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, dibenz(a,h)anthracene, benzene, and naphthalene. For these COCs, the remedial goals (i.e. site-specific screening criteria) are used. For other creosote-related compounds, NJ GWQS are used. Furthermore, for compounds that do not have specific criteria listed in the NJ GWQS Table 1, interim generic criteria are used. The site-specific screening criteria and NJ GWQS for VOCs and SVOCs detected in the 2011 sampling round are presented in **Table 3-2**, along with the maximum concentrations and locations where these concentrations were detected. **Table 3-3** presents a summary of all detected analytes in groundwater samples collected in 2011. **Table 3-4** presents the concentration trends in wells in which creosote-related contaminants were consistently detected since the RI in 1999.

In addition to the laboratory analytical results, field water quality results including pH, DO, ORP, turbidity, conductivity, and temperature were recorded during the sampling activities. Final groundwater quality readings are provided in **Table 3-5**. Ferrous iron was analyzed in the field using HACH kits. These results are presented in **Table 3-6** with results of other natural attenuation parameters.

Groundwater purging sheets are presented in **Appendix D**. The complete, validated analytical data for the 2011 event is included in **Appendix E**.

3.2.1 Volatile Organic Compounds

Seventeen VOCs were detected in groundwater samples during the 2011 sampling event as shown in **Table 3-3**. The creosote-related contaminants are BTEX, styrene, and isopropylbenzene. Benzene exceeded the site specific screening criteria, and tetrachloroethene (PCE) and carbon tetrachloride were detected at concentrations exceeding the NJ GWQS. However, chlorinated solvents (i.e. PCE and carbon tetrachloride) are not creosote-related contaminants and will not be further discussed. Benzene exceeded the remediation goal of 1 µg/L in monitoring wells MW-2RD, MW-2RI, MW-2RS, MW-6S, MW-7S, and MW-110I. Benzene has been consistently detected above the remediation goal in all six of these wells.

3.2.2 Semi-Volatile Organic Compounds

Twenty three SVOCs were detected during the 2011 sampling event as shown in **Table 3-3**. Among the creosote-related SVOCs, 19 (2-methylphenol, 4-methylphenol, 2,4-dimethylphenol, naphthalene, 2-methylnaphthalene, acenaphthene, dibenzofuran, fluorene, phenanthrene, carbazole, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and dibenzo(a,h)anthracene) were detected at concentrations exceeding the site-specific screening criteria.

3.2.3 Metals

Analysis for iron and manganese was conducted because naturally occurring biodegradation of creosote contaminants can increase iron and manganese levels in groundwater. The NJDEP GWQS for iron and manganese are 300 µg/L and 50 µg/L, respectively. A total of 23 of the 30 wells have iron concentrations exceeded the GWQS criteria. A total of 20 of the 30 wells have manganese concentrations exceeded the GWQS criteria. Note that natural attenuation of chlorinated compounds such as trichloroethene (TCE) or PCE detected at this site could also increase the iron concentration in groundwater.

3.2.4 DNAPL

Free phase creosote in a DNAPL form was observed in MW-5I, MW-5S, MW-6S, and MW-7S during this round of groundwater sampling. Concentrations of creosote-related compounds in MW-2RS, and MW-2RI were as high as those in MW-6S and MW-7S, and creosote was historically observed in these wells. Therefore, NAPL most likely remains in the vicinity of those six wells. It should be noted that the concentrations of creosote-related compounds in MW-2D have significantly decreased and no longer indicate the presence of NAPL.

3.3 Contaminant Distribution

Figures 3-4, **3-5**, and **3-6** present the results of COCs in overburden and bedrock aquifers over time. **Table 3-4** presents the concentrations of creosote-related compounds over time for wells where these compounds have been consistently detected in the monitoring program. The discussion of contaminant distribution refers to overburden and bedrock aquifers separately.

3.3.1 Overburden

Creosote-related VOC contaminants were detected in wells MW-2RS, MW-6S, MW-7S, and MW-111S. Creosote-related SVOC contaminants were detected in 5 out of the 15 overburden wells (this includes wells MW-111S, MW-12RS, MW-2RS, MW-6S, and MW-7S).

Well MW-2RS is located just to the north of former Lagoon A and is adjacent to the railroad tracks. Contaminant concentrations in MW-2RS are high. For example, naphthalene was detected at a concentration of 11,000 µg/L, which is similar to the concentration in wells where free phase creosote was also observed. Well MW-1RS is upgradient of the former Canal A and well MW-104RS is located side-gradient of well MW-2RS. Therefore, site related contaminants are not expected to be observed in either well MW-1RS or well MW-104RS, and were not found during this sampling event, but were found in trace concentrations in 2009 and 2010. Well MW-12RS is downgradient of the former Canal A/Lagoon A area represented by well MW-2RS. Creosote-related contaminants were detected in MW-12RS at trace levels in all five years of sampling events after it was installed in the summer of 2007. Only carbazole exceeded the NJDEP interim groundwater criterion of 5 µg/L in all five years. Further downgradient from the former Canal A/Lagoon A area, no creosote-related VOCs or SVOCs were found in MW-110S and MW-103S. Therefore, even though there may be residual NAPL in the vicinity of well MW-2RS and the former Canal A/Lagoon A area that can serve as a continued source for groundwater contamination in the overburden, the contaminants do not appear to migrate significantly from the source area.

Upgradient of the former Lagoon A, no creosote-related contaminants were identified in well MW-124S. Since well MW-124S is upgradient of Lagoon A site-related contaminants are not expected to migrate to this location by groundwater flow.

Wells MW-6S and MW-7S are located in the vicinity of former Lagoon B and are adjacent to the CSX Railroad tracks. Similar to the previous groundwater sampling rounds, BTEX and creosote-related SVOCs were found in these two wells at high concentrations. Creosote was observed in both of these wells during the field sampling activity. The creosote observed in wells MW-6S and MW-7S serves as a source of groundwater contamination. However, no creosote-related contaminants were detected in groundwater monitoring well MW-114S located downgradient from former Lagoon B. No contamination was observed in MW-125S or MW-126S which are located further downgradient. Contaminants in groundwater in this downgradient area were not observed at concentrations greater than the NJDEP GWQS, which indicates that creosote-related contaminants did not appear to migrate far from the source.

Well MW-111S is located near the southwest end of the former Canal B. Even though benzene was not detected in this well, other creosote-related VOC and SVOC contaminants have been consistently observed in samples from this well since 1999. In addition, from 1999 to 2011, naphthalene, acenaphthene, dibenzofuran, fluorene, phenanthrene, anthracene, and carbazole etc. show general increasing trends (see **Table 3-4** and **Figure 3-7a**). This indicates that a residual source may exist near MW-111S causing the observed increases. Downgradient from the vicinity of well MW-111S, no creosote-related contaminants were detected in MW-127S from 2007 to 2011, except for anthracene which was detected in 2010 at a trace level of 0.26 µg/L.

In general, free phase creosote still persists in the overburden aquifer at isolated locations in the vicinity of the former Lagoon areas and possibly at a small area with very limited quantity near the west end of Canal B (**Figure 3-4**). The removal of source material through the remedial action, and the aging of creosote (being released for more than 60 years) may result in the remaining fraction of contaminants being less soluble and less mobile. This is consistent with the limited detections of creosote-related contaminants from monitoring wells downgradient of the sources.

3.3.2 Bedrock

Creosote-related VOCs were detected in wells MW-2RI, MW-2RD, MW-5I, MW-110I, and MW-116I. Creosote-related SVOCs were detected all bedrock wells MW-2RI, MW-2RD, MW-5I, MW-110I, MW-111I, MW-114I, and MW-116I. VOC and SVOC concentrations in MW-2RI, MW-2RD, MW-5I, MW-110I, and MW-116I exceeded the site-specific screening criteria for one or more compounds (see **Table 3-3** and **Figures 3-5** and **3-6**).

MW-2RI and MW-2RD are located north of former Lagoon A, near the Norfolk-Southern Railroad tracks. High creosote-related contaminant concentrations were detected in this area during the RI, indicating the presence of free phase creosote in the vicinity. After these two wells were re-installed in 2007, creosote-related contaminant concentrations in MW-2D showed a decreasing trend until 2010 when there was a slight increase in concentration (**Figure 3-7b**). Creosote-related contaminant concentrations in MW-2I are high and generally comparable to the 1999 RI data.

MW-116I is located north of former Lagoon A, on the north side of the railroad tracks. Free phase creosote was observed in this well in 1999 during the RI. However, groundwater results from 2005 to 2011 did not indicate the presence of residual free phase creosote at this location. The concentrations of the soluble fraction of creosote, such as benzene, naphthalene, 2-methylnaphthalene, have significantly decreased since 2005 compared to their 1999 levels. Concentrations of the less soluble and/or strongly adsorbable compounds, such as acenaphthene, dibenzofuran, fluorene, phenanthrene, and carbazole have also shown a decreasing trend since 2005 (**Figure 3-7c**). One explanation of these concentration reductions is that the original DNAPL observed during the RI in 1999 was of limited quantity in the vicinity of the well screen or dropped into the bottom of the well from a fracture during well installation. As the DNAPL ages, the more soluble fraction will tend to dissolve in groundwater leaving less soluble compounds in the residual DNAPL. In addition, some of the DNAPL will diffuse into the rock matrix. Eventually all of the DNAPL will either dissolve in groundwater or diffuse into the rock matrix. The rock matrix will slowly release contaminants back into groundwater over time. The increase of naphthalene concentration in 2011 sampling event may due to high precipitation in 2011 resulted in higher back diffusion than the previous years.

Wells MW-124I and MW-124D were installed between well MW-116I and the MW-118 well cluster to investigate the limit of contamination down dip from MW-116I. Creosote-related contaminants were not detected in groundwater samples from wells MW-124I and MW-124D over the past five years using the low-SVOC method, indicating that free phase creosote has not migrated down dip. The removal of DNAPL contaminants from the overburden significantly reduced the quantity of creosote at the source; thus limited the further movement of DNAPL down dip. As shown in **Figure 3-2** and **3-3**, wells MW-124I and MW-124D are located hydraulically upgradient of MW-116I and the former Lagoon A area; therefore the dissolved contaminants would not be expected to migrate from MW-

116I to MW-124I and MW-124D. It should be noted that trace concentrations (less than 0.1 µg/L) of creosote-related contaminants were detected in MW-124I and MW-124D using the SIM analytical method in 2009 and 2010. The concentrations were estimated because they were lower than the reporting limit of 0.1 µg/L. These detections were also significantly lower than site-specific screening criteria. After an evaluation of the project data quality objectives, SIM analysis was eliminated (FCR-5 in **Appendix A**).

Site related contaminants are not expected to be detected in wells MW-123I and MW-123D because they are side gradient of the former Canal A/Lagoon A source area. Trace levels of creosote-related contaminants were detected in these two wells in 2009 and were only detected in well MW-123D in 2010 using SIM analysis. The detected concentrations were less than the site-specific screening criteria and the NJDEP GWQS. After an evaluation of the project data quality objectives, SIM analysis was eliminated (FCR-5 in **Appendix A**). No creosote related contaminants were detected in the 2011 sampling event.

Wells MW-110I and MW-110D were installed in 2007 downgradient of former Lagoon A and upgradient of former Lagoon B. Creosote-related contaminants have been detected in MW-110I since 2007; and have been detected at trace levels in MW-110D from 2008 through 2010, but not in 2011. At well MW-110I, benzene concentrations exceeded the site-specific screening criterion of 1 µg/L from 2007 to 2011; and carbazole concentrations exceeded the site-specific screening criterion of 5 µg/L from 2008 to 2011 (**Table 3-4**). Because MW-110I and MW-110D are located hydraulically downgradient from the former Canal A they appear to be at the fringe of the groundwater contaminant plume originating from the former Canal A/Lagoon A area.

Well MW-5I is located in the vicinity of the former Lagoon B, and free phase creosote was previously observed in this well. Very high creosote-related contaminant concentrations were detected in this well in 2011, but less than results of 2010 sampling event. Residual free phase creosote is most likely present in the vicinity of the well. It is not clear whether or not the free phase creosote observed in nearby wells MW-6S and MW-7S is connected to this location through a preferential fracture pathway.

Wells MW-114I and MW-114D are located south of MW-5I and hydraulically downgradient from former Lagoon B. Creosote-related contaminants have been decreasing since RI in 1999, and none exceeded criteria in 2011. MW-114D exhibited no creosote related detections. MW-114I exhibited detections of isopropylbenzene, acenapthylene, fluorine, and fluoranthene below criteria. Generally, concentrations of the relatively soluble fraction of creosote (except for naphthalene) demonstrate decreasing trends as shown in **Figure 3-7d** and **3-7e**. Overall, contaminant concentrations in MW-114I were low, which indicates that this well is at the fringe of the stable bedrock contaminant plume. Further downgradient of former Lagoon B, no contaminants were detected in MW125I.

Well MW-111I is located near the southwest end of the former Canal B with MW-111S and MW-111D. This well was sampled twice in 1999 and annually from 2005 to 2007. No creosote-related contaminants were detected in MW-111I in these five rounds of sampling events, therefore this well was dropped from the monitoring network in 2008. Because contaminant concentrations indicate an increasing trend in MW-111S, MW-111I was added into the monitoring network in 2009, 2010, and 2011. No creosote-related contaminants were detected in MW-111I in 2009 or 2010 samples, however were detected in 2011 below site-specific screening criteria (naphthalene, acenaphthene, dibenzofuran, and carbazole). No creosote-related contaminants were detected in MW-111D in 2011. The detection of creosote-related contaminants in MW-111I may suggest that there is a pathway that allows the potential residual contamination in MW-111S to migrate down into the intermediate bedrock.

Similar to the groundwater contamination distribution in the overburden, migration of contaminant in the bedrock aquifer appears to be limited.

3.3.3 Summary of Groundwater Contaminant Distribution

In both the overburden and bedrock units, creosote-related contamination is limited to the locations (former Canal A, former Lagoon A, former Lagoon B, and former Canal B) where residual free phase creosote is directly observed or might be present based on contaminant levels. Downgradient from these source areas, creosote-related contaminant concentrations have shown overall decreasing trends in wells MW-2D, MW-116I, MW-114I, MW-114D (**Figure 3-7b** to **3-7e**).

Overall, the extent of the contaminant plume with concentrations exceeding the site-specific screening criteria remains unchanged since the last evaluation.

3.4 Natural Attenuation Evaluation

During the groundwater sampling round that was completed during late October 2011, groundwater samples were collected and analyzed in support of evaluation of the potential for groundwater contamination to naturally attenuate at the site. The samples were analyzed for the following parameters: nitrate/nitrite, alkalinity, sulfate, sulfide, iron, manganese, ferrous iron, and MEE; results are presented in **Table 3-6**. Field measurements including DO, ORP, pH, and temperature, also NA indicators, are presented in **Table 3-5**.

This assessment of natural attenuation potential consists of evaluating: (1) the historically detected concentrations of creosote-related compounds including BTEX and PAHs, in conjunction with (2) the natural attenuation (NA) indicator parameter data, for evidence indicating potential occurrence of biodegradation processes.

Natural attenuation refers to all of the naturally occurring processes (biodegradation, dispersion, sorption, volatilization etc.) that affect the fate and transport of contaminants in soil, groundwater, and fractured bedrock to achieve a reduction in the total mass, toxicity, mobility, volume, or concentration of a contaminant. Under proper conditions, these processes can be effective in containing and remediating such contamination in a reasonable time frame.

Biodegradation consists of biologically facilitated degradation reactions that involve electron transfer, where the microorganisms gain energy for growth and reproduction by mediating redox reactions which require an electron donor and an electron acceptor. In this case, BTEX and PAHs act as electron donors in the biodegradation processes. BTEX is known to be readily biodegraded or biotransformed under both aerobic and anaerobic conditions. Biodegradation of PAHs with less than five rings (naphthalene, phenanthrene, fluorene, and fluoranthene etc.) generally occurs at a much slower rate, typically orders of magnitude slower than BTEX biodegradation. Biodegradation of PAHs can occur under both aerobic and anaerobic conditions. Higher molecular weight PAHs tend to be more recalcitrant to biodegradation.

DO is the preferred electron acceptor, as microorganisms can harvest more energy by mediating such oxidation reactions. However, when sufficient carbon source (e.g., contaminant) is present, DO can be depleted, resulting in the subsurface becoming anaerobic. The next preferred electron acceptor for BTEX and PAHs biodegradation is nitrate, followed by manganese (IV), iron (III), sulfate, and carbon dioxide. Increasingly reducing conditions are observed as the microorganisms move down this hierarchy of preferred electron acceptors. Complete mineralization of benzene and naphthalene has been reported in some laboratory-scale tests. Degradations of low molecular PAHs have been observed under nitrate-reducing, iron-reducing, sulfate-reducing, and methanogenic conditions (Rockne et al., 1998; Karthikeyan and Bhandari 2001). The exact pathway of anaerobic biodegradation of PAHs has yet to be discovered (Karthikeyan 2001).

Groundwater contamination has been observed in both the overburden and the bedrock aquifers. As depicted on **Figure 3-1**, the groundwater flow in the overburden beneath the site is predominantly to the southeast toward the Millstone River. As depicted on **Figures 3-2** and **3-3**, in the bedrock aquifers groundwater gradients to the northwest of the divide are toward the Raritan River and Manville municipal wells C1 and C2, while groundwater gradients to the southeast of the divide are toward the Millstone River. Vertical groundwater gradients are downward near the divide and upward near the Millstone River.

Nine rounds of groundwater sampling events have been completed to date. The first two rounds occurred in 1999 prior to the excavation of source material and contaminated soil at the former lagoons, canals, lagoon exit trenches, and residential properties at the Claremont Development. A number of overburden monitoring wells (e.g., MW-11S, MW-12S) were removed and a number of bedrock monitoring wells (e.g. MW-2I, MW-2D) were abandoned as a result of the remedial activities undertaken, and therefore were not sampled during the annual groundwater sampling events in 2005 and 2006. To better monitor the groundwater quality at the site, 18 new monitoring wells were installed and sampled in 2007, with many of the wells installed in the vicinity of the removed or abandoned wells around the former Lagoon A area. The locations of all the new monitoring wells are presented on **Figure 1-2**.

<u>Contaminant Trend Analysis Summary</u>

As illustrated on **Figures 3-4** through **3-6** and in Table **3-4**, the highest naphthalene and benzene concentrations were detected in monitoring wells in the vicinity of former Lagoons A (i.e., well cluster MW-2RS, 2RI,and 2RD, and MW-116I), and former Lagoon B (i.e., MW-6S, MW-7S, and MW-5I). In fact, NAPL was observed in MW-2I, MW-2D, MW-116I, MW-6S, MW-7S, and MW-5I during the RI in 1999. Naphthalene concentrations have significantly decreased in MW-116I, from greater than 3,000 µg/L in 1999 to 350 µg/L in 2011, and other creosote-related contaminant concentrations have also decreased in MW-116I as shown in **Table 3-4** and **Figure 3-7c**. Well cluster MW-2R was installed in 2007 in the immediate vicinity of former well cluster MW-2I/2D, which was abandoned as a result of the remediation actions discussed above. Compared to the historical results of MW-2D, the concentrations of naphthalene and other creosote-related contaminants detected exhibited a decreasing trend. For instance, naphthalene was detected at a concentration of 29 µg/L in MW-2RD in 2011, versus 7,400 µg/L in MW-2D in November 1999. For the Lagoon B and Canal B area, NAPL was again observed in MW-6S, MW-7S, and MW-5I during the recent groundwater sampling rounds. Naphthalene and other creosote-related contaminants have also been detected in MW-111S, MW-

110I, and MW-114I. Contaminant concentrations in these wells have generally exhibited decreasing trends with the exception of MW-111S and MW-111I. MW-111S has exhibited generally increasing concentrations of dibenzofuran, phenanthrene, and carbozole since 1999; however, the contamination identified in MW-111S appears to be localized based on the analytical results of the downgradient well MW-127S. This is the first year that creosote-related contaminants have been detected in MW-111I, at concentrations below site-specific screening criteria.

Natural Attenuation Evaluation

For the purpose of this evaluation of NA potential, MW-2RS, and MW-6S and MW-7S, represent two distinct residual source areas in the overburden aquifer; Lagoon A and Lagoon B, respectively. Similarly, MW-2RI/2RD and MW-5I represent two distinct source areas in the bedrock aquifer, Lagoon A and Lagoon B, respectively. Although NAPL was observed in MW-116I in 1999, the recent contaminant concentrations detected in this well do not indicate the presence of NAPL. Therefore, MW-116I is not considered to be within the source area. The MW-124 well cluster (MW-124S, I, and D) is located hydraulically upgradient of Lagoon A and Lagoon B, and only trace creosote-related contaminants have been detected in any of the three wells during the groundwater sampling events to date, with no detections in these wells during this sampling event. For the purpose of this NA discussion, MW-124S, MW-124I, and MW-124 D will be used as the background wells in the overburden, intermediate, and deep aquifers, respectively.

In order to evaluate whether the subsurface conditions are conducive to intrinsic natural degradation of BTEX and site-specific PAHs, NA indicator parameters are individually evaluated. These parameters are pH, DO, temperature, ORP, nitrate/nitrite, manganese, ferrous iron, sulfate, sulfide, methane, and alkalinity as calcium carbonate.

pH

In general, pH between 5 and 9 standard units are considered to support active biological growth and biodegradation. The pH of the collected groundwater samples, with only one exception (recorded pH for MW-111D was 9.2), ranged between 5 and 9 standard units. The groundwater pH at the site is relatively neutral and is supportive of natural biodegradation.

Dissolved Oxygen

DO is the preferred electron receptor for microorganisms that facilitate biodegradation. As presented in **Table 3-5**, the DO reading was 1.73 mg/L in the overburden aquifer background well (MW-124S), 2.12 mg/L in the intermediate bedrock aquifer background well (MW-124I), and 3.1 mg/L in the deep bedrock aquifer background well (MW-124D). As groundwater flows toward the wells within the contaminant source areas of the overburden aquifer and the intermediate bedrock aquifer, DO was reduced to 0.12 in MW-2RS, 1.97 in MW-2RI, and 0.47 in MW-2RD. The depletion of DO is likely due to microorganism using the DO as an electron acceptor. Therefore, the subsurface conditions are anaerobic in Lagoon A and Lagoon B areas in both the overburden aquifer and the bedrock aquifers, where biodegradation utilizing other electron acceptors may occur.

Temperature

Active biological growth can generally occur under temperatures ranging from 10 to 35 degrees Celsius (°C), and biochemical process can be accelerated when the temperature is greater than 20 °C. The temperature of all the groundwater samples collected during the 2011 sampling event from the site ranged from 14.86 to 21.69 °C. Therefore, the observed temperature is supportive of natural biodegradation.

Oxidation/Reduction Potential

Oxidation/reduction potential (ORP) is an indicator of the ability of a solution to accept or transfer electrons. The most common electron acceptors in subsurface include DO, nitrate, manganese (IV), iron (III), sulfate, and carbonate, which require increasingly reducing conditions. It is difficult to obtain accurate ORP values for quantitative interpretation, as many oxidation-reduction reactions occurring simultaneously in groundwater can affect the ORP. However, for qualitative discussion purposes, ORP provides a reasonable measure of the degree of reducing conditions and, therefore, it is useful for identifying locations in the plume where reductive processes may be occurring. As shown in **Table 3-5**, in both the overburden aquifer and the bedrock aquifers, recorded ORP values were generally significantly lower in source area wells than background wells (e.g.,-91.7 in MW-2RS versus 106.1 in MW-124S, -106.2 mV in MW-2RI versus 194.3 mV in MW-124I, -134.4mV in MW-2RD versus 140 mV in MW-124D, and -37.3 in MW-5I versus 194.3 mV in MW-124I). This relative difference suggests that reducing conditions exist in the source areas, and that anaerobic biodegradation is likely occurring in the source areas of the overburden and bedrock aquifers.

Nitrate/Nitrite

Once the available DO has been depleted, nitrate is the next preferred electron receptor for anaerobic biodegradation of hydrocarbon compounds. As shown in **Table 3-6**, nitrate/nitrite concentrations were non-detect in the source area wells, compared to those in background wells in the overburden and bedrock aquifers (e.g., non-detect in MW-2RS versus 6 mg/L in MW-124S; non-detect in MW-2RI and MW-2RD, versus 4.6 mg/L and 4.2 mg/L in MW-124I and MW-124D, respectively). The data suggest that microbially-mediated nitrate reduction is occurring in the source areas both in the overburden aquifer and bedrock aquifers, and that anaerobic biodegradation is likely occurring in those aquifers.

Manganese

Once the available DO and nitrate sources have been depleted, biologically available manganese (IV) in the subsurface solid matrix can be utilized as alternate electron acceptor. Manganese (IV) is reduced into more soluble form, manganese (II), and thus enters the groundwater. An increase of manganese (II) concentration compared to background levels is an indicator that anaerobic biodegradation using manganese (IV) as an electron acceptor is occurring or has occurred. At this site, manganese (II) was not originally included in the analytical parameter list. As an alternative, total manganese results obtained from the metal analysis were used to evaluate the manganese reduction.

In the overburden aquifer, elevated manganese concentrations occurred in source area wells MW-2RS, MW-6S and MW-7S (18.4 mg/L, 5.52 mg/L and 2.39 mg/L, respectively), compared to that in the background well MW-124S (0.25 mg/L). Similarly, in the bedrock aquifers, elevated manganese concentrations were exhibited in bedrock aquifer source area wells MW-2RI, MW-2RD and MW-5I (3.32 mg/L, 0.62 mg/L and 0.12 mg/L, respectively), compared to that in the background wells MW-124I and 124D (0.048 mg/L and non-detect, respectively). The elevated concentrations of manganese in the groundwater samples collected from both the overburden aquifer source area and the bedrock aquifer source area compared to the background wells is consistent with the higher concentrations of soluble manganese (II) expected in groundwater from the reduction of less soluble manganese (IV) by microorganisms. Based on these results, microbially-mediated reduction of manganese (IV) is likely occurring or has occurred in the source areas of the overburden aquifer and bedrock aquifers.

Ferrous Iron

Once the available DO, nitrate sources, and biologic available manganese (IV) have been depleted, biologic available iron (III) in the subsurface solid matrix can be utilized as alternate electron receptor. Iron (III) is reduced into more soluble form, ferrous iron (Fe II), and thus enters the groundwater. An increase of ferrous iron concentration compared to background levels often indicates an anaerobic biodegradation using iron (III) as an electron acceptor is occurring or has occurred at a site.

In the overburden aquifer, ferrous iron concentrations were detected at 2.72 mg/L, 2.26 mg/L and 2.77 mg/L in source area wells MW-2RS, MW-6S and MW-7S, respectively, compared to a lower concentration of 1.18 mg/L in the background well MW-124S. In the bedrock aquifers, ferrous iron concentration was detected at 0.25 mg/L, 0.29 mg/L, and 0.66 mg/L in source area wells MW-2RI, MW-2RD and MW-5I, respectively, compared to lower concentrations to the background wells, 0.03 mg/L in MW-124I and non-detect in MW-124D. Based on these results, microbially-mediated reduction of iron (III) is likely occurring or has occurred in the overburden and intermediate and deep bedrock aquifers at the source areas.

Sulfate

Once the available DO has been depleted and only insufficient nitrate, manganese (IV), and iron (III) sources are present, sulfate may be utilized as an alternate electron acceptor. Sulfate is reduced to sulfide during anaerobic biodegradation.

As shown in **Table 3-6**, in both the overburden aquifer and the intermediate bedrock aquifer, generally lower concentrations of sulfate were detected in the source area wells, compared to that in the background wells (e.g., non-detect in MW-2RI versus 29 mg/L in MW-124I). This suggests that anaerobic biodegradation utilizing sulfate as an electron receptor is likely occurring in the intermediate bedrock aquifer. On the other hand, a higher than background level of sulfate was detected in the shallow aquifer source well MW-2RS(210 mg/L versus 52 mg/L in MW-124S) and deep bedrock aquifer source well MW-2RD (i.e., 110 mg/L versus 14 mg/L in MW-124D), indicating that sulfate utilizing anaerobic degradation is not occurring in these formations.

Methane

Methane is a by-product of anaerobic biodegradation and also an indicator of the methanogenic condtions. Therefore, elevated methane concentrations (above site background levels) are indicative of biodegradation in an anaerobic environment.

Low methane concentrations were observed in the source area wells of both the overburden aquifer and the bedrock aquifers. Specifically, in the overburden aquifer, methane was detected at 19 µg/L, 22 µg/L and 2.7 µg/L in source area wells MW-2RS, MW-6S and MW-7S, respectively, compared to non-detect in background well MW-124S (<2 µg/L); in the bedrock aquifers, methane was detected at 11 µg/L, 9.5 µg/L, and 2.7 µg/L in source area well MW-2RI, MW-5I and MW-2RD, respectively, compared to non-detect in both background wells MW-124I and MW-124D. At this low concentration, it is difficult to conclude if the anaerobic biodegradation is occurring or not under methanogenic conditions in both the overburden aquifer and the bedrock aquifers at the site.

Alkalinity
Increased biological activity often results in elevated carbon dioxide concentrations in groundwater, and hence increased alkalinity due to the reaction between carbon dioxide and aquifer minerals. Therefore, elevated alkalinity is often indicative of biological activity and potential biodegradation.

Elevated alkalinity concentrations were observed in the source area wells of both the overburden aquifer (in Lagoon A area well MW-2RS) and the intermediate bedrock aquifer. Specifically, in the overburden aquifer, alkalinity was detected at 240 mg/L in source area wells MW-2RS, compared to 100 mg/L in background well MW-124S; in the intermediate bedrock aquifer, alkalinity was detected at 160 mg/L and 120 mg/L in source area well MW-2RI and MW-5I, respectively, compared to 62 mg/L in background well MW-124I. The alkalinity concentration detected in the deep bedrock aquifer source well MW-2RD (96 mg/L) however, is the same as that in the background well MW-124D (96 mg/L). Therefore, these data indicate that biodegradation is likely occurring or has occurred in the source areas of the overburden aquifer and the intermediate bedrock aquifer at the site.

Summary of Natural Attenuation
Based on the above evaluation, which is also summarized in **Table 3-7**, groundwater in the vicinity of the remaining creosote source areas (specifically, MW-2RS, MW-6S and MW-7S in overburden aquifer, MW-2RI, and MW-5I in the bedrock aquifers), has the following general characteristics: low ORP, depleted nitrate/nitrite, elevated levels of ferrous iron and manganese, elevated levels of methane and alkalinity, relative to the background wells. Taken together, these geochemical characteristics and the generally decreasing trend of BTEX and PAHs in source area wells strongly suggest that natural attenuation, via the anaerobic degradation pathway, is occurring within the source areas. The natural attenuation conditions observed in 2011 are consistent with the conditions observed in previous years. Natural attenuation of both BTEX and PAHs may have contributed to the apparent containment of the contaminant distribution in the vicinity of former Lagoons A and B, particularly considering the long site release history, which dates back to over 60 years ago.

3.5 Quality Assurance and Quality Control

Quality Assurance and Quality Control (QA/QC) measures were taken in the field according to the USACE and EPA approved Sample Analysis Plan (CDM 2005). The QA/QC samples collected were two field duplicates, two matrix spike and matrix spike duplicates (MS/MSD) samples, seven field blanks (also called rinsate blank), and seven trip blanks. Sampling information relative to QA/QC is summarized on the Sample Summary Table (**Table 2-2**). A data usability worksheet is provided in **Appendix E**. Key information in the data usability worksheet is summarized in this section.

3.5.1 Blank Contamination

Slight contaminations were detected in field rinsate blanks and trip blanks (***Table* E-*1*** and ***E-2***) as follows:

Field Blanks:
For volatile organic analysis:

- Methylene chloride was detected in 7 of the 7 field blanks with concentrations ranging from 1.3 µg/L to 2.2 µg/L
- 2-Butanone was detected in 1 of the 7 field blanks with a concentration 4.1J µg/L

- Chloroform was detected in 7 of the 7 field blanks with concentrations ranging from 0.43J µg/L to 0.86 µg/L
- Toluene was detected in 7 of the 7 field blanks with a concentrations ranging from 0.72 µg/L to 1.1 µg/L
- 2-Hexanone was detected in 1 of the 7 field blanks with a concentration 2.1J µg/L
- Ethylbenzene was detected in 7 of the 7 field blanks with concentrations ranging from 0.1J µg/L to 0.17J µg/L
- m,p-Xylene was detected in 7 of the 7 field blanks with concentrations ranging from 0.37J µg/L to 0.65 µg/L
- o-Xylene was detected in 7 of the 7 field blanks with concentrations ranging from 0.17J µg/L to 0.27J µg/L

Trip Blanks:

- Carbon disulfide was detected in 1 of the 7 trip blanks with a concentration of 0.47J µg/L
- Acetone was detected in 7 of the 7 trip blanks with a concentrations ranging from 10 µg/L to 16 µg/L
- Methylene chloride was detected in 7 of the 7 trip blanks with concentrations ranging from 0.87 µg/L to 1.1 µg/L
- 2-Butanone was detected in 6 of the 7 trip blanks with a concentrations ranging from 5 µg/L to 7.9 µg/L
- Chloroform was detected in 7 of the 7 trip blanks with concentrations ranging from 0.37J µg/L to 0.51 µg/L
- Toluene was detected in 7 of the 7 trip blanks with concentrations ranging from 0.85 µg/L to 1.4 µg/L
- Ethylbenzene was detected in 7 of the 7 trip blanks with concentrations ranging from 0.12J µg/L to 0.22J µg/L
- m,p-Xylene was detected in 7 of the 7 trip blanks with concentrations ranging from 0.43J µg/L to 0.86 µg/L
- o-Xylene was detected in 7 of the 7 trip blanks with concentrations ranging from 0.18J µg/L to 0.37J µg/L

Blank contaminants are listed and evaluated in the data usability worksheet in **Appendix E**. The concentrations of contaminants detected in the blanks associated with this sampling event were generally low and do not adversely impact project goals. Associated sample results were qualified non-detect "U" by validator.

3.5.2 Field Duplicate Sample Comparison

The relative percent differences (RPDs) of results for the two pairs of duplicate samples were calculated to determine the precision of laboratory results. The groundwater sample pairs are MW114D-Y7 and MW614D-Y7; and MW2RS-Y7 and MW602S-Y7. The detailed results are shown in **Appendix E-3**. RPD calculations were not performed for duplicate pairs with detection in only one of the samples. When one or both results were below five times the CRQL the absolute difference (ABS) was used to evaluate precision. The RPD criteria were met for all duplicate pairs. The ABS result for ferrous iron exceeded the CRQL for duplicate pair MW114D-Y7. Overall the duplicate analyses for this sampling event exhibited good precision.

Matrix spike and matrix spike duplicate (MS/MSD) samples were collected and analyzed for metals. MS/MSD results did not indicate general matrix interference.

3.5.3 Deuterated Monitoring Compounds and Surrogate Compounds

Deuterated monitoring compounds (DMCs) and Surrogate compounds are added to each sample to evaluate the method's ability to extract and quantify related compounds. For 13 volatile organic compounds (VOC) samples the DMC recoveries were outside criteria. For 79 semi-volatile organic compounds (SVOC) samples the surrogate recoveries were outside criteria. Results associated with poor DMC and surrogate recovery were qualified as estimated "J" or "UJ" by the data validator.

Poor DMC and Surrogate recoveries generally indicate matrix interference. However since the poor recoveries results occurred in only few of the analysis the performance does not critically impact project data objectives.

3.5.4 Initial and Continuing Calibration

Initial and continuing calibration checks are used to verify instrument performance prior to and during an analytical sequence. The calibration percent difference criteria for 23 SVOCs did not meet criteria. In these cases the associated sample results were qualified as estimated "J" or "UJ" by the validator.

3.5.5 Field Measurements

Using the EPA Region II low flow sampling method, groundwater parameters pH, conductivity, turbidity, DO, ORP, and temperature were measured. No equipment malfunctions or calibration errors were recorded in the data logs.

Ferrous iron was also measured in the field using a HACH analysis. The field duplicate pair (MW-114D-Y7 and MW-614D-Y7) did meet criteria and were qualified rejected. The original results, 4.3 and 4.1 mg/l, respectively, exceeded the HACH test limit and the diluted results, both 0.2 mg/l. There was no apparent reason for the discrepancy in results since the diluted samples would have been within the range of the measuring device. Therefore the data were deemed unusable and rejected by the data validator.

3.6 Well Condition Survey

As noted in Section 2.3, CDM Smith completed the well inventory survey using an electronic checklist template provided by EPA. Following field work, the information was consolidated onto the individual field checklist forms, entered onto the electronic template provided by EPA, and checked against the form generated in the field. The completed well inventory checklists are provided in **Appendix B**.

Four wells – MW-4D and MW-115 cluster – were located and abandoned by NJ licensed driller in April 2011, as recommended by CDM Smith following the well condition survey conducted in 2009.

Four wells were not evaluated with the survey: MW-105S, MW-105I, MW-105D, and MW-126S.

The following is a list of wells in need of maintenance or repair:

- MW-1RS: Needs one new bolt
- MW-5S: Missing a bolt, has no inner cap
- MW-5I: Missing bolts, cap does not fit well
- MW-10S: On angle, no well seal
- MW-10I: Concrete pad/surface casing not in good condition
- MW-12RS: 2 of the 3 screws holding down the cap will not go in; well needs to be properly abandoned
- MW-107S: Loose bolts – need to be replaced
- MW-111S: One of the bolts is stripped
- MW-111D: No lock on inner seal
- MW-113I: Screws/bolts unthreaded
- MW-114I: No lock
- MW-114D: The lock is broken off the well
- MW-115S: No tag or written ID, no lock on outer casing lid
- MW-115I: Surface casing not in good condition
- MW-115D: No tag or ID, top of outer casing (lid) is broken and inside is exposed
- MW-119S: Flush mount cover cracked in center, missing portion of cap by screw hole, missing bolt – cap needs to be replaced
- MW-121S: Bolts to flush-mount box are stripped, require replacement
- MW-123S: Chipped concrete pad, broken lip on casing 4 inches long, broken cast iron well cap (missing), screw holes all but 1 broke
- MW-123I: Well surface casing is missing (cast iron)
- MW-123D: Concrete pad not in good condition
- MW-124S: Needs bolts to secure well
- MW-124I: Needs bolts to secure well and also needs an internal cap
- MW-124D: Needs bolts to secure well; well needs internal cap
- MW-T-1: No padlock; requires padlock assembly (welding)

Section 4
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Tables

Table 2-1
Well Construction Information
Year 7 Groundwater Sampling
Federal Creosote Superfund Site
Manville, New Jersey

Location	Total Depth of Boring (feet bgs)	Well Diameter (inches)	Well Screen Length (feet)	Well Screen Material	Top of Screen (feet bgs)	Bottom of Screen (feet bgs)	Depth to Bedrock (feet bgs)	Stickup (feet)	Date Installed	NJDEP Permit #	Easting (X)	Northing (Y)	Top of Inner Casing Elevation (ft)
MW-1RS	35	4	15	0.010-inch slot wire wrapped SS	19	34	35	-0.4	7/10/2007	2500068859	468516	623444	52.04
MW-2RD	200	4	10	0.010-inch slot wire wrapped SS	188	198	33	-0.4	8/22/2007	2500068862	468852	623570	50.14
MW-2RI	75	4	10	0.010-inch slot wire wrapped SS	64	74	33	-0.4	8/24/2007	2500068861	468841	623567	50.04
MW-2RS	33	4	15	0.010-inch slot wire wrapped SS	17	32	33	-0.4	7/13/2007	2500068860	468836	623559	50.13
MW-5I	56	2	10	0.010-inch slot PVC	45	55	23	-0.28	2/24/1998	DNA	469920.92	623229.01	40.40
MW-5S	24.5	2	10	0.010-inch slot PVC	14	24	23.5	-0.82	3/16/1998	DNA	469918.66	623223.85	39.81
MW-6S	22.6	2	10	0.010-inch slot PVC	14	24	22.6	-0.56	3/16/1998	DNA	469822.15	623105.06	40.50
MW-7S	25.3	2	10	0.010-inch slot PVC	14.5	24.5	25.3	-0.57	3/10/1998	DNA	469720.11	622979.63	40.72
MW-8D	198	2	20	0.010-inch slot PVC	178	198	29	-0.19	3/11/1998	DNA	469375.48	622557.79	41.76
MW-8I	55	2	10	0.010-inch slot PVC	45	55	29	-0.33	3/11/1998	DNA	469379.19	622563.37	41.62
MW-9S	28	2	10	0.010-inch slot PVC	18	28	28	-0.37	3/13/1998	DNA	469545.75	623079.69	44.63
MW-10I	50	2	10	0.010-inch slot PVC	40	50	263	-0.24	3/13/1998	DNA	469671.34	623216.52	43.04
MW-10S	24.5	2	10	0.010-inch slot PVC	14	24	24.5	-0.29	3/2/1998	DNA	469670.35	623215.28	43.02
MW-12RS	31.5	4	15	0.010-inch slot wire wrapped SS	15.5	30.5	31.5	-0.4	7/17/2007	2500068853	468877	623365	47.23
MW103S	33.5	4	15	0.010-inch slot SS	17.4	32.4	33.5	-0.36	1/13/1999	25-53648	469353.02	623310.71	49.74
MW104RS	31.5	4	15	0.010-inch slot wire wrapped SS	15.5	30.5	31.5	-0.4	7/11/2007	2500068858	469239	623712	47.75
MW106S	31.5	4	15	0.010-inch slot SS	14.9	29.9	31.5	-0.34	1/26/1999	25-53695	469732.66	623420.62	46.97
MW107S	37.5	4	15	0.010-inch slot SS	21.3	36.3	37.5	-0.31	2/9/1999	25-53655	470250.56	624046.57	52.97
MW108S	25.5	4	10	0.010-inch slot SS	13.9	23.9	25.5	-0.02	2/4/1999	25-53656	470179.06	623558.13	40.90
MW109S	33	4	15	0.010-inch slot SS	14.5	32.5	33	-0.28	1/20/1999	25-53646	469203.71	622667.03	49.01
MW-110D	200	4	10	0.010-inch slot wire wrapped SS	180	190	31.5	-0.4	8/28/2007	2500068855	469227	622982	48.98
MW-110I	75	4	10	0.010-inch slot wire wrapped SS	60	70	31.5	-0.4	8/27/2007	2500068854	469198	622984	49.23
MW110S	33	4	15	0.010-inch slot SS	16.7	31.7	33	-0.26	1/21/1999	25-53647	469215.72	622980.82	49.16
MW111D	200	4	10	0.010-inch slot SS	182	192	37	-0.4	6/10/1999	25-53778	468234.50	622289.52	53.07
MW111I	66	4	10	0.010-inch slot SS	55	65	37	-0.36	6/14/1999	25-53777	468252.90	622235.09	53.74
MW111S	37	4	5	0.010-inch slot SS	31.8	36.8	37	-0.24	2/24/1999	25-53779	468239.22	622258.08	53.44
MW112D	200	4	10	0.010-inch slot SS	184	194	25.5	0.25	6/10/1999	25-53781	470487.41	622220.13	41.71
MW112I	71	4	10	0.010-inch slot SS	60	70	25.5	-0.37	6/22/1999	25-53780	470455.36	622208.72	41.76
MW112S	25.5	4	15	0.010-inch slot SS	9.9	24.9	25.5	-0.07	2/22/1999	25-53782	470472.18	622215.96	41.92
MW113D	200	4	10	0.010-inch slot SS	150	160	23.8	-0.25	6/3/1999	25-53784	471480.60	623575.74	40.83
MW113I	131	4	10	0.010-inch slot SS	120	130	23.8	-0.28	6/22/1999	25-53783	471474.80	623549.63	40.13
MW113S	25.5	4	15	0.010-inch slot SS	8.3	23.3	23.8	0.05	2/23/1999	25-53785	471477.71	623563.27	40.58
MW114D	200	4	10	0.010-inch slot SS	168	178	21	2.25	6/11/1999	25-53787	470031.72	623056.65	40.62
MW114I	71	4	10	0.010-inch slot SS	60	70	21	2.23	6/24/1999	25-53786	470010.15	623039.46	40.74
MW114S	21	4	13	0.010-inch slot SS	6.6	19.6	21	2.29	2/16/1999	25-53788	470022.62	623049.15	40.79
MW115D	200	4	10	0.010-inch slot SS	112	122	31.9	2.13	6/4/1999	25-53792	470924.78	624885.22	47.35
MW115I	93	4	10	0.010-inch slot SS	82	92	31.9	2.21	6/23/1999	25-53791	470894.19	624876.69	48.45
MW115S	31.9	4	15	0.010-inch slot SS	15.6	30.6	31.9	3.01	3/11/1999	25-53793	470909.34	624881.95	48.92
MW116I	71.5	4	10	0.010-inch slot SS	61.3	71.3	33	-0.24	3/18/1999	25-53794	468690.61	623689.65	50.54
MW117D	200	4	10	0.010-inch slot SS	116	126	32.9	-0.47	6/24/1999	25-53798	468098.40	623782.98	47.79
MW117I	70.1	4	10	0.010-inch slot SS	60	70	32.9	-0.32	6/24/1999	25-53797	468105.35	623758.03	48.20

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MW117S	33	4	15	0.010-inch slot SS	17.4	32.4	32.9	-0.45	3/10/1999	25-53801	468101.97	623769.97	48.07
MW118D	300	4	10	0.010-inch slot SS	224.8	234.8	32.7	-0.37	6/21/1999	25-53800	468176.74	624371.99	49.17
MW118I	81	4	10	0.010-inch slot SS	70	80	32.7	-0.36	6/21/1999	25-53799	468156.72	624350.37	46.65
MW118S	32.7	4	15	0.010-inch slot SS	16.4	31.4	32.7	-0.37	3/9/1999	25-53802	468162.77	624364.84	49.49
MW119S	35	4	15	0.010-inch slot SS	19.2	34.2	35	-0.35	8/31/1999	25-54916	468145.34	623165.44	51.07
MW121S	36	4	15	0.010-inch slot SS	19.6	34.6	35	-0.3	8/30/1999	25-54912	468704.12	622672.98	52.05
MW122S	34.8	4	15	0.010-inch slot SS	19.2	34.2	34.8	-0.24	8/29/1999	25-54913	467998.29	622234.16	53.46
MW-123D	200	4	10	0.010-inch slot wire wrapped SS	188	198	33	-0.4	8/21/2007	2500068845	469368	624378	48.64
MW-123I	75	4	10	0.010-inch slot wire wrapped SS	50	60	33	-0.4	8/20/2007	2500068844	469379	624382	49.00
MW-123S	33	4	15	0.010-inch slot wire wrapped SS	17	32	33	-0.4	7/9/2007	2500068843	469388	624358	49.00
MW-124D	200	4	10	0.010-inch slot wire wrapped SS	185	195	33	-0.4	8/13/2007	2500068848	468468	623903	49.33
MW-124I	75	4	10	0.010-inch slot wire wrapped SS	53.5	63.5	33	-0.4	8/13/2007	2500068847	468472	623890	49.40
MW-124S	33	4	15	0.010-inch slot wire wrapped SS	18	33	33	-0.4	8/3/2007	2500068846	468476	623881	49.36
MW-125I	75	4	10	0.010-inch slot wire wrapped SS	48	58	22	-0.4	8/24/2007	2500068852	470119	622638	39.17
MW-125S	22	4	15	0.010-inch slot wire wrapped SS	6	21	22	-0.4	7/24/2007	2500068851	470107	622634	39.22
MW-126S	30.5	4	15	0.010-inch slot wire wrapped SS	13.5	28.5	30.5	-0.4	7/20/2007	2500068849	469695	622434	37.55
MW-127S	36.5	4	15	0.010-inch slot wire wrapped SS	20.5	35.5	36.5	-0.4	7/18/2007	2500068856	468405	621829	53.62
T-1	234	4	10	0.010-inch slot SS	102.2	112.2	DNA	3	7/8/1999	25-54570	469992.35	622948.86	42.46

Notes:
bgs: below ground surface
DNA: data not available
SS: stainless steel

Table 2-2
Sample and Analysis Summary
Year 7 Groundwater Sampling
Federal Creosote Superfund Site
Manville, New Jersey

Sample ID	CLP Sample ID	Matrix	Collection Date	QC	Analysis
MW-1RS-Y7	B9QR1/ MB9QR1	Aqueous	10/24/2011	NA for trace VOCs and SVOCs, MS/D for all other samples	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
MW-2RD-Y7	B9QR2/ MBQR2	Aqueous	10/21/2011	NA	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
MW-2RI-Y7	B9QR3/ MB9QR3	Aqueous	10/21/2011	NA	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
MW-2RS-Y7	B9QR4/ MB9QR4	Aqueous	10/21/2011	NA	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
MW-602S-Y7	B9QR6/MB9 QR6	Aqueous	10/21/2011	Field Duplicate of MW-2RS-Y7	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
MW-5I-Y7	B9QR5/ MB9QR5	Aqueous	10/25/2011	NA	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
MW-6S-Y7	B9QR8/ MB9QR8	Aqueous	10/25/2011	NA	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
MW-7S-Y7	B9QR9/ MB9QR9	Aqueous	10/25/2011	NA	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
MW-12RS-Y7	B9QR0/ MB9QR0	Aqueous	10/24/2011	NA	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
MW-103S-Y7	B9QN8/ MB9QN8	Aqueous	10/24/2011	NA	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
MW-104RS-Y7	B9QN9/ MB9QN9	Aqueous	10/24/2011	NA	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
MW-110D-Y7	B9QP0/ MB9QP0	Aqueous	10/20/2011	NA	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
MW-110I-Y7	B9QP1/ MB9QP1	Aqueous	10/20/2011	NA	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
MW-110S-Y7	B9QP2/ MP9QP2	Aqueous	10/20/2011	NA	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
MW-111D-Y7	B9QP3/ MB9QP3	Aqueous	10/19/2011	NA	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
MW-111I-Y7	B9QP4/ MB9QP3	Aqueous	10/19/2011	NA	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity

Table 2-2
Sample and Analysis Summary
Year 7 Groundwater Sampling
Federal Creosote Superfund Site
Manville, New Jersey

Sample ID	CLP Sample ID	Matrix	Collection Date	QC	Analysis
MW-111S-Y7	B9QP5/ MB9QP5	Aqueous	10/19/2011	NA	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
MW-114D-Y7	B9QP6/ MB9QP6	Aqueous	10/17/2011	NA	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
MW-614D-Y7	B9QR7/ MB9QR7	Aqueous	10/17/2011	Field Duplicate of MW-114D-Y7	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
MW-114I-Y7	B9QP7/ MB9QP7	Aqueous	10/17/2011	NA	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
MW-114S-Y7	B9QP8/ MB9QP8	Aqueous	10/17/2011	NA	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
MW-116I-Y7	B9QP9/ MB9QP9	Aqueous	10/18/2011	NA	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
MW-123D-Y7	B9QQ0/ MB9QQ0	Aqueous	10/20/2011	NA	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
MW-123I-Y7	B9QQ1/ MB9QQ1	Aqueous	10/20/2011	NA	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
MW-123S-Y7	B9QQ2/ MB9QQ2	Aqueous	10/20/2011	NA	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
MW-124D-Y7	B9QQ3/ MB9QQ3	Aqueous	10/18/2011	NA	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
MW-124I-Y7	B9QQ4/ MB9QQ4	Aqueous	10/18/2011	NA	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
MW-124S-Y7	B9QQ5/ MB9QQ5	Aqueous	10/18/2011	NA	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
MW-125I-Y7	B9QQ6/ MB9QQ6	Aqueous	10/18/2011	NA for trace VOCs and SVOCs, MS/D for all other samples	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
MW-125S-Y7	B9QQ7/ MB9QQ7	Aqueous	10/18/2011	NA	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
MW-126S-Y7	B9QQ8/ MB9QQ8	Aqueous	10/19/2011	NA	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
MW-127S-Y7	B9QQ9/ MB9QQ8	Aqueous	10/25/2011	NA	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity

Table 2-2
Sample and Analysis Summary
Year 7 Groundwater Sampling
Federal Creosote Superfund Site
Manville, New Jersey

Sample ID	CLP Sample ID	Matrix	Collection Date	QC	Analysis
FB-10172011-Y7	B9QS0/ MB9QS0	Aqueous	10/17/2011	Field Blank	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
FB-10182011-Y7	B9QS1/ MB9QS1	Aqueous	10/18/2011	Field Blank	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
FB-10192011-Y7	B9QS2/ MB9QS2	Aqueous	10/19/2011	Field Blank	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
FB-10202011-Y7	B9QS3/ MB9QS3	Aqueous	10/20/2011	Field Blank	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
FB-10212011-Y7	B9QS4/ MB9QS4	Aqueous	10/21/2011	Field Blank	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
FB-10242011-Y7	B9QS5/ MB9QS5	Aqueous	10/24/2011	Field Blank	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
FB-10252011-Y7	B9QS6/ MB9QS6	Aqueous	10/25/2011	Field Blank	Trace VOCs, SVOCs, Fe(III), Mn, Nitrate/nitrite, Sulfate, Sulfide, MEE, Alkalinity
TB-10172011-Y7	B9QS8	Aqueous	10/17/2011	Trip Blank	Trace VOCs
TB-10182011-Y7	B9QS9	Aqueous	10/18/2011	Trip Blank	Trace VOCs
TB-10192011-Y7	B9QT0	Aqueous	10/19/2011	Trip Blank	Trace VOCs
TB-10202011-Y7	B9QT1	Aqueous	10/20/2011	Trip Blank	Trace VOCs
TB10212011-Y7	B9QT2	Aqueous	10/21/2011	Trip Blank	Trace VOCs
TB-10242011-Y7	B9QT3	Aqueous	10/24/2011	Trip Blank	Trace VOCs
TB-10252011-Y7	B9QT4	Aqueous	10/25/2011	Trip Blank	Trace VOCs

Notes:
NA - Not available
Fe(III) - Ferric Iron
Mn - Manganese
MS/D - Matrix spike/ matrix spike duplicate
MEE - Methane, ethane, and ethene
VOCs - Volatile organic compounds
SVOCs - Semi-volatile organic compounds

Table 2-3
Analytical Methods
Year 7 Groundwater Sampling
Federal Creosote Superfund Site
Manville, New Jersey

Analytical Parameter	Analytical Method	Sample Preservation (1)	Laboratory
Trace VOC[1,a]	EPA SOP-DW-1 (GC/MS Method)	Cool to 4°C, preserved with HCl	Chemtech Consulting Group
Low SVOC[a]	SOM01.2	Cool to 4°C	Chemtech Consulting Group
Nitrate/Nitrite[b]	EPA Method 353.2 (SOP C-79; Colorimetric Method) (NELAC)	prepreserved, H_2SO_4 to pH <2, Cool to 4˚C	DESA
Iron and Manganese	EPA Method 200.7 (SOP C-109; ICP/AES Method) (NELAC)	prepreserved, HNO_3 to pH < 2, Cool to 4˚C	Bonner Analytical Testing Company
Ferrous iron	Field colorimetric HACH Method 8146	No preservation required	Field
Sulfate	EPA SOP C-19, (Turbidimetric Method)	Cool to 4˚C	DESA
Sulfide	EPA SOP C-115 (Colorimetric Method)	Minimum aeration, no headspace, zinc acetate and NaOH, pH >9, Cool to 4 °C	DESA
Alkalinity[c,2]	SM2320, 1999 20th Ed (SOP C-18; Titration Method)	Cool to 4˚C	DESA
Methane/ethane/ethene[d]	EPA SOP C-124 (GC/FID Method)	Cool to 4˚C, no headspace, avoid air and light	DESA

Notes:

-1 Adjust pH of aqueous VOC samples to <2 by the drop-wise addition of 1:1 HCl to the three 40 ml VOC vials prior to filling with sample. Determine the number of acid drops required on a third sample aliquot (of equal volume) - do not acidify samples if effervescence is observed and indicate on sample that no acid preservative has been added.

-2 Monographic calculations in method SM4500-CO_2, option B or D may be used to determine carbonate relationships.

Methods:

(a) “Aqueous samples collected for trace volatile organic compounds was analyzed according to “Analytical Method for the Analysis of Trace Concentrations of Volatile Organic Compounds” Document number SOM01.1/1.2. SVOC was analyzed according to "Multi-Media, Multi-Concentration, Organic Analytical Service for Superfund”. Document number SOM01.1/1.2. Iron and manganese was analyzed according to "Multi-Media, Multi Concentration, Inorganic Analytical Service for Superfund" Document number

(b) Methods for Chemical Analysis of Water and Wastes: EPA-600/4-79-029, revised March 1983.

(c) Standard Methods for the Examination of Water and Wastewater, 18th Edition. Carbonate and bicarbonate alkalinity are to be reported separately.

(d) Robert S. Kerr Environmental Research Laboratory Standard Operating Procedures, No. 147, Revision No. 0, January 1993.

ABBREVIATIONS USED:

°C	degree Celsius	mL	milliliter
DESA	Division of Environmental Science and Assessment	NaOH	sodium hydroxide
FID	flame ionization detector	NELAC	National Environmental Lab Accreditation Conference
GC/MS	gas chromatography mass spectrometry	VOC	volatile organic compound
HCl	hydrochloric acid	SVOC	semi-volatile organic compound
H_2SO_4	sulfuric acid	SOP	standard operating procedure
HNO_3	nitric acid		

Table 3-1
Synoptic Water Level Measurements
Year 7 Groundwater Sampling
Federal Creosote Superfund Site
Manville, New Jersey

Well ID	Elevation of Top of Inner Casing (ft amsl)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Date of Measurements	Depth to water[1] (ft btic)	Groundwater Elevation (ft amsl)	Total Depth Measured (ft btic)
MW-1RS	52.04	19	34	10/12/2011	19.43	32.61	34.6
MW-2RD	50.14	188	198	10/12/2011	16.42	33.72	199
MW-2RI	50.04	64	74	10/12/2011	16.73	33.31	74.7
MW-2RS	50.13	17	32	10/12/2011	16.07	34.06	33
MW-5I	40.40	45	55	10/12/2011	9.80	30.60	NA
MW-5S	39.81	14	24	10/12/2011	8.45	31.36	NA
MW-6S	40.50	14	24	10/12/2011	9.15	31.35	NA
MW-7S	40.72	14.5	24.5	10/12/2011	9.51	31.21	NA
MW-8D	41.76	178	198	10/12/2011	11.21	30.55	196.3
MW-8I	41.62	45	55	10/12/2011	9.68	31.94	54
MW-9S	44.63	18	28	10/12/2011	12.20	32.43	27.2
MW-10I	43.04	40	50	10/12/2011	11.01	32.03	49.4
MW-10S	43.02	14	24	10/12/2011	10.52	32.50	23.98
MW-12RS	47.23	15.5	30.5	10/12/2011	13.49	33.74	31.2
MW-103S	49.74	17.4	32.4	10/12/2011	16.64	33.10	32.8
MW-104RS	47.75	15.5	30.5	10/12/2011	14.14	33.61	31
MW-106S	46.97	14.9	29.9	10/12/2011	14.51	32.46	30.76
MW-107S	52.97	21.3	36.3	10/12/2011	20.97	32.00	36.94
MW-108S	40.90	13.9	23.9	10/12/2011	9.60	31.30	25
MW-109S	49.01	14.5	32.5	10/12/2011	17.11	31.90	32.6
MW-110D	48.98	180	190	10/12/2011	17.01	31.97	198.6
MW-110I	49.23	60	70	10/12/2011	17.11	32.12	73.2
MW-110S	49.16	16.7	31.7	10/12/2011	16.32	32.84	32.4
MW-111D	53.07	182	192	10/12/2011	20.57	32.50	198
MW-111I	53.74	55	65	10/12/2011	20.71	33.03	65.03
MW-111S	53.44	31.8	36.8	10/12/2011	20.14	33.30	35.6
MW-112D	41.71	184	194	10/12/2011	14.83	26.88	199.4
MW-112I	41.76	60	70	10/12/2011	16.09	25.67	70.5
MW112S	41.92	9.9	24.9	10/12/2011	15.33	26.59	24.3
MW113D	40.83	150	160	10/12/2011	10.92	29.91	200
MW113I	40.13	120	130	10/12/2011	10.24	29.89	133
MW113S	40.58	8.3	23.3	10/12/2011	10.67	29.91	22.5
MW114D	40.62	168	178	10/12/2011	9.84	30.78	198
MW114I	40.74	60	70	10/12/2011	10.75	29.99	72.8
MW114S	40.79	6.6	19.6	10/12/2011	10.40	30.39	21.5
MW115D	47.35	112	122	10/12/2011	18.02	29.33	199.5
MW115I	48.45	82	92	10/12/2011	18.60	29.85	94.3
MW115S	48.92	15.6	30.6	10/12/2011	17.45	31.47	33.1
MW116I	50.54	61.3	71.3	10/12/2011	16.79	33.75	70.6
MW117D	47.79	116	126	10/12/2011	13.12	34.67	198
MW117I	48.20	60	70	10/12/2011	13.76	34.44	69.5
MW117S	48.07	17.4	32.4	10/12/2011	13.47	34.60	31.7

Table 3-1
Synoptic Water Level Measurements
Year 7 Groundwater Sampling
Federal Creosote Superfund Site
Manville, New Jersey

Well ID	Elevation of Top of Inner Casing (ft amsl)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Date of Measurements	Depth to water[1] (ft btic)	Groundwater Elevation (ft amsl)	Total Depth Measured (ft btic)
MW118D	49.17	224.8	234.8	10/12/2011	16.23	32.94	300
MW118I	49.65	70	80	10/12/2011	15.75	33.90	82.1
MW118S	49.49	16.4	31.4	10/12/2011	15.57	33.92	30.8
MW119S	51.07	19.2	34.2	10/12/2011	16.23	34.84	33.2
MW121S	52.05	19.6	34.6	10/12/2011	17.61	34.44	33.9
MW122S	53.46	19.2	34.2	10/12/2011	19.37	34.09	33.5
MW-123D	48.64	188	198	10/12/2011	16.49	32.15	198
MW-123I	49.00	50	60	10/12/2011	15.72	33.28	31.8
MW-123S	49.00	17	32	10/12/2011	15.67	33.33	59.7
MW-124D	49.33	185	195	10/12/2011	15.18	34.15	199.5
MW-124I	49.40	53.5	63.5	10/12/2011	14.88	34.52	59.6
MW-124S	49.36	18	33	10/12/2011	15.62	33.74	32.7
MW-125I	39.17	48	58	10/12/2011	10.49	28.68	57.6
MW-125S	39.22	6	21	10/12/2011	10.18	29.04	20.7
MW-126S	37.55	13.5	28.5	10/12/2011	7.75	29.80	28.3
MW-127S	53.62	20.5	35.5	10/12/2011	21.98	31.64	34.8
T-1	42.46	102.2	112.2	10/12/2011	13.09	29.37	118

Notes:
amsl: above mean sea level
bgs: below ground surface
btic: below top of inner casing
ft: feet
NA: not available
1. Depth to water measured from the top of inner casing.

Table 3-2
Groundwater Screening Criteria and Maximum Detections
Year 7 Groundwater Sampling
Federal Creosote Superfund Site
Manville, New Jersey

Chemical	NJDEP Ground Water Quality Criteria* (µg/L)	NJDEP Practical Quantitation Limit (µg/L)	ROD RG (µg/L)	Site-Specific Screening Criteria (µg/L)	Maximum Detection (µg/L)		Wells with Maximum Detection
Carbon Disulfide	700	1	----	NA	0.27	J	MW-6S-Y7
trans-1,2-Dichloroethene	100	1	----	NA	0.11	J	MW-110I-Y7
Methyl Tert-Butyl Ether	70	1	----	NA	0.55		MW-114I-Y7
cis-1,2-Dichloroethene	70	1	----	NA	2.2		MW-110I-Y7
Chloroform	70	1	----	NA	3.5		MW-104RS-Y7
1,1,1-Trichloroethane	30	1	----	NA	0.26	J	MW-123S-Y7
Carbon Tetrachloride******	0.4	1	----	NA	**0.44**	**J**	MW-123I-Y7
Benzene******	0.2	1	1	1	**62**		MW-2RS-Y7
Trichloroethene	1	1	----	NA	0.84		MW-111S-Y7
Toluene	600	1	----	600	50		MW-2RS-Y7-DUP
Tetrachloroethene******	0.4	1	----	NA	**77**		MW-127S-Y7
Methylcyclohexane**	100	----	----	NA	0.37	J	MW-2RS-Y7-DUP
Ethylbenzene	700	2	----	700	220		MW-2RS-Y7-DUP
m,p-Xylene	1000	2	----	1000	250		MW-2RS-Y7-DUP
O-XYLENE	1000	2	----	1000	190		MW-2RS-Y7, MW-2RS-Y7-DUP
Styrene	100	2	----	100	23		MW-2RS-Y7
Isopropylbenzene	700	1	----	700	27		MW-2RS-Y7-DUP
2-Methylphenol*****	5	----	----	5	**17**		MW-6S-Y7
4-Methylphenol*****	5	----	----	5	**8.6**		MW-2RS-Y7
2,4-Dimethylphenol	100	20	----	100	**170**		MW-6S-Y7
Naphthalene	300	2	300	300	**11000**		MW-2RS-Y7/MW-2RS-Y7-DUP
2-Methylnaphthalene****	30	10	----	30	**450**		MW-6S-Y7
1,1'Biphenyl	400	10	----	400	160		MW-111S-Y7, MW-2RS-Y7-DUP
Acenaphthylene**	100	10	----	100	80		MW-7S-Y7
Acenaphthene	400	10	----	400	**480**		MW-2RS-Y7-DUP
Dibenzofuran****	100	----	----	100	**350**		MW-2RS-Y7-DUP
Fluorene	300	1	----	300	**320**		MW-7S-Y7
Phenanthrene****	100	0.3	----	100	**640**		MW-7S-Y7
Anthracene	2000	10	----	2000	51		MW-7S-Y7
Carbazole*****	5	----	----	5	**280**		MW-2RS-Y7-DUP
Fluoranthene	300	10	----	300	**490**		MW-7S-Y7
Pyrene	200	0.1	----	200	**340**		MW-7S-Y7
Benzo(a)anthracene******	0.05	0.1	5	5	**140**		MW-7S-Y7
Chrysene	5	0.2	5	5	**76**		MW-7S-Y7
Benzo(b)fluoranthene******	0.05	0.2	5	5	**120**		MW-7S-Y7
Benzo(k)fluoranthene	0.5	0.3	5	5	**27**		MW-7S-Y7
Benzo(a)pyrene******	0.005	0.1	5	5	**64**		MW-7S-Y7
Indeno(1,2,3-cd)pyrene******	0.05	0.2	5	5	**45**	**J**	MW-7S-Y7
Dibenz(a,h)anthracene******	0.005	0.3	----	0.005	**9**		MW-7S-Y7
Benzo(g,h,i)perylene**	100	0.3	----	100	28		MW-7S-Y7
Iron	300	20	----	300	**41700**		MW-2RS-Y7-DUP
Manganese	50	0.4	----	50	**19900**		MW-2RS-Y7-DUP

Notes:

Maximum detection in bold indicates exceedance.

J: Estimated Concentration

NA: Not applicable because the compound is not site related.

ROD: Record of Decision

RG: Remediation goal

µg/L: Microgram per liter

"----": Not applicable

*: New Jersey Department of Environmental Protection (NJDEP) Groundwater Quality Standard as amended on July 22, 2010.
For xylene, the total concentration shall be less than 1,000 µg/L.

**: NJDEP Interim Groundwater Standards for non-carcinogen are used.

***: NJDEP Interim Groundwater Standards for carcinogen are used. Carbazole is human carcinogen and 2-methylphenol or 4-methylphenol are possible human carcinogen. Dimethylphthalate and dibenzofuran are group D non-carcinogens.

****: The NJDEP Practical Quantitation Limit is higher than the NJDEP Groundwater Quality Criteria.

Table 3-3
Summary of Detected VOCs, SVOCs and Metals
Year 7 Groundwater Sampling
Federal Creosote Superfund Site
Manville, New Jersey

Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\ Depth	Site-Specific Screening Criteria	NJDEP GWQS *	MW-1RS-Y7 / 10/24/2011 / 19 to 34 ft. bgs		MW-2RD-Y7 / 10/21/2011 / 188 to 198 ft. bgs		MW-2RI-Y7 / 10/21/2011 / 64 to 74 ft. bgs		MW-2RS-Y7 / 10/21/2011 / 17 to 32 ft. bgs		MW-2RS-Y7-DUP / MW-602S-Y7 / 10/21/2011 / 17 to 32 ft. bgs		MW-5I-Y7 / 10/25/2011 / 45 to 55 ft. bgs		MW-6S-Y7 / 10/25/2011 / 14 to 24 ft. bgs	
(Group Description)																	
Volatile Organic Compounds																	
Carbon Disulfide	µg/L	NA	700	-----	U	-----	U	-----	U	-----	U	-----	U	0.22	J	0.27	J
trans-1,2-Dichloroethene	µg/L	NA	100	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	UJ
Methyl Tert-Butyl Ether	µg/L	NA	70	-----	U	-----	U	-----	U	0.19	J	0.17	J	-----	U	-----	U
cis-1,2-Dichloroethene	µg/L	NA	70	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	UJ
Chloroform	µg/L	NA	70	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
1,1,1-Trichloroethane	µg/L	NA	30	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Carbon Tetrachloride	µg/L	NA	0.4	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Benzene	µg/L	1	0.2	-----	U	1.3		1.9		62		60		-----	U	11	
Trichloroethene	µg/L	NA	1	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Toluene	µg/L	600	600	-----	U	-----	U	4.3		49		50		3.6		25	
Tetrachloroethene	µg/L	NA	0.4	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Methylcyclohexane	µg/L	NA	100	-----	U	-----	U	0.28	J	0.33	J	0.37	J	-----	U	-----	U
Ethylbenzene	µg/L	700	700	-----	U	4.9		54		210		220		24		28	
m,p-Xylene**	µg/L	1000	1000	-----	U	-----	U	61		240		250		32		42	
O-XYLENE**	µg/L	1000	1000	-----	U	3.8		43		190		190		28		23	
Styrene	µg/L	100	100	-----	U	-----	U	-----	U	23		22		-----	U	6.4	
Isopropylbenzene	µg/L	700	700	-----	U	3.1		17		26		27		6.1		3.9	
Semi-Volatile Organic Compounds																	
2-Methylphenol	µg/L	5	5	-----	U	-----	U	-----	U	7		6.6		-----	U	17	
4-Methylphenol	µg/L	5	5	-----	U	-----	U	-----	U	8.6		8.1		-----	U	7.2	
2,4-Dimethylphenol	µg/L	100	100	-----	U	-----	U	-----	U	35		37		-----	U	170	
Naphthalene	µg/L	300	300	-----	U	29		5700		11000		11000		4100		5800	
2-Methylnaphthalene	µg/L	30	30	-----	U	-----	U	220		200		200		440		450	
1,1'Biphenyl	µg/L	400	400	-----	U	19		140		150		160		45		60	
Acenaphthylene	µg/L	100	100	-----	U	-----	U	4.4	J	13		15		4.4	J	38	
Acenaphthene	µg/L	400	400	-----	U	31		380		460		480		200		300	
Dibenzofuran	µg/L	100	100	-----	U	34		330		330		350		160		240	
Fluorene	µg/L	300	300	-----	U	16		220		210		220		130		230	
Phenanthrene	µg/L	100	100	-----	U	13		250		200		210		86		430	
Anthracene	µg/L	2000	2000	-----	U	-----	U	18		11		11		8.4		35	
Carbazole	µg/L	5	5	-----	U	42		250		260		280		78		170	
Fluoranthene	µg/L	300	300	-----	U	-----	U	24		13		15		41		260	
Pyrene	µg/L	200	200	-----	U	-----	U	13		7.1		8.1		29		190	
Benzo(a)anthracene	µg/L	5	0.05	-----	U	-----	U	-----	U	-----	U	-----	U	12		64	
Chrysene	µg/L	5	5	-----	U	-----	U	-----	U	-----	U	-----	U	10		53	
Benzo(b)fluoranthene	µg/L	5	0.05	-----	U	-----	U	-----	U	-----	U	-----	U	10		57	
Benzo(k)fluoranthene	µg/L	5	0.5	-----	U	-----	U	-----	U	-----	U	-----	U	4.2	J	19	
Benzo(a)pyrene	µg/L	5	0.005	-----	U	-----	U	-----	U	-----	U	-----	U	8		40	
Indeno(1,2,3-cd)pyrene	µg/L	5	0.05	-----	U	-----	U	-----	U	-----	U	-----	U	4.6	J	28	J
Dibenz(a,h)anthracene	µg/L	0.005	0.005	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	6	
Benzo(g,h,i)perylene	µg/L	100	100	-----	U	-----	U	-----	U	-----	U	-----	U	3.4	J	18	
Inorganic Analytes																	
Iron	µg/L	300	300	1660		307		894		35900		41700		1740		33100	
Manganese	µg/L	50	50	24.2		618		3320		18400		19900		124		5520	

Notes: x

U: Non-detect; J: Estimated result; R: Rejected; L: Biased low

µg/L: microgram per liter

*: New Jersey Department of Environmental Protection Groundwater Quality Standards

Results of creosote-related compounds in bold and yellow shade exceeded the site-specific screening criteria.

Results in green shade did not exceed site-specific screening criteria, but exceeded the New Jersey Groundwater Quality Criteria.

**: Criteria of 1000 µg/L is for total xylenes (m,p-xylene plus o-xylene).

Table 3-3
Summary of Detected VOCs, SVOCs and Metals
Year 7 Groundwater Sampling
Federal Creosote Superfund Site
Manville, New Jersey

Chemical Name	Sample Code / Sample Name / Sample Date / Unit \\ Depth	Site-Specific Screening Criteria	NJDEP GWQS *	MW-7S-Y7 10/25/2011 14.5 to 24.5 ft. bgs		MW-12RS-Y7 10/24/2011 15.5 to 30.5 ft. bgs		MW-103S-Y7 10/24/2011 17.4 to 32.4 ft. bgs		MW-104RS-Y7 10/24/2011 15.5 to 30.5 ft. bgs		MW-110D-Y7 10/20/2011 180 to 190 ft. bgs		MW-110I-Y7 10/20/2011 60 to 70 ft. bgs	
(Group Description)															
Volatile Organic Compounds															
Carbon Disulfide	µg/L	NA	700	0.23	J	-----	U	-----	U	-----	U	-----	U	-----	U
trans-1,2-Dichloroethene	µg/L	NA	100	-----	U	-----	U	-----	U	-----	U	-----	U	0.11	J
Methyl Tert-Butyl Ether	µg/L	NA	70	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
cis-1,2-Dichloroethene	µg/L	NA	70	-----	U	-----	U	-----	U	-----	U	-----	U	2.2	
Chloroform	µg/L	NA	70	-----	U	-----	U	-----	U	3.5		-----	U	-----	U
1,1,1-Trichloroethane	µg/L	NA	30	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Carbon Tetrachloride	µg/L	NA	0.4	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Benzene	µg/L	1	0.2	2.1		-----	U	-----	U	-----	U	-----	U	1.1	
Trichloroethene	µg/L	NA	1	-----	U	-----	U	-----	U	-----	U	-----	U	0.78	
Toluene	µg/L	600	600	11		-----	U	-----	U	-----	U	-----	U	-----	U
Tetrachloroethene	µg/L	NA	0.4	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Metylcyclohexane	µg/L	NA	100	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Ethylbenzene	µg/L	700	700	11		-----	U	-----	U	-----	U	-----	U	0.81	
m,p-Xylene**	µg/L	1000	1000	23		-----	U	-----	U	-----	U	-----	U	-----	U
O-XYLENE**	µg/L	1000	1000	17		-----	U	-----	U	-----	U	-----	U	-----	U
Styrene	µg/L	100	100	5.3		-----	U	-----	U	-----	U	-----	U	-----	U
Isopropylbenzene	µg/L	700	700	0.86		0.24	J	-----	U	-----	U	-----	U	2.7	
Semi-Volatile Organic Compounds															
2-Methylphenol	µg/L	5	5	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
4-Methylphenol	µg/L	5	5	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
2,4-Dimethylphenol	µg/L	100	100	13		-----	U	-----	U	-----	U	-----	U	-----	U
Naphthalene	µg/L	300	300	7200		-----	U	-----	U	-----	U	-----	U	4.8	J
2-Methylnaphthalene	µg/L	30	30	270		-----	U	-----	U	-----	U	-----	U	-----	U
1,1'Biphenyl	µg/L	400	400	76		-----	U	-----	U	-----	U	-----	U	-----	U
Acenaphthylene	µg/L	100	100	80		-----	U	-----	U	-----	U	-----	U	-----	U
Acenaphthene	µg/L	400	400	430		8.7		-----	U	-----	U	-----	U	28	
Dibenzofuran	µg/L	100	100	320		16		-----	U	-----	U	-----	U	-----	U
Fluorene	µg/L	300	300	320		4.3	J	-----	U	-----	U	-----	U	20	
Phenanthrene	µg/L	100	100	640		-----	U	-----	U	-----	U	-----	U	-----	U
Anthracene	µg/L	2000	2000	51		-----	U	-----	U	-----	U	-----	U	-----	U
Carbazole	µg/L	5	5	180		13		-----	U	-----	U	-----	U	44	
Fluoranthene	µg/L	300	300	490		4.4	J	-----	U	-----	U	-----	U	2.2	J
Pyrene	µg/L	200	200	340		2.4	J	-----	U	-----	U	-----	U	-----	U
Benzo(a)anthracene	µg/L	5	0.05	140		-----	U	-----	U	-----	U	-----	U	-----	U
Chrysene	µg/L	5	5	76		-----	U	-----	U	-----	U	-----	U	-----	U
Benzo(b)fluoranthene	µg/L	5	0.05	120		-----	U	-----	U	-----	U	-----	U	-----	U
Benzo(k)fluoranthene	µg/L	5	0.5	27		-----	U	-----	U	-----	U	-----	U	-----	U
Benzo(a)pyrene	µg/L	5	0.005	64		-----	U	-----	U	-----	U	-----	U	-----	U
Indeno(1,2,3-cd)pyrene	µg/L	5	0.05	45	J	-----	U	-----	U	-----	U	-----	U	-----	U
Dibenz(a,h)anthracene	µg/L	0.005	0.005	9		-----	U	-----	U	-----	U	-----	U	-----	U
Benzo(g,h,i)perylene	µg/L	100	100	28		-----	U	-----	U	-----	U	-----	U	-----	U
Inorganic Analytes															
Iron	µg/L	300	300	23700		6490		161		13400		423		271	
Manganese	µg/L	50	50	2390		6650		-----	U	584		470		875	

Notes:

U: non-detect; J: Estimated result; R: Rejected, L: Biased low

µg/L: microgram per liter

*: New Jersey Department of Environmental Protection Groundwater Quality Standards

Results of creosote-realted compounds in bold and yellow shade exceeded the site-specific screening criteria.

Results in green shade did not exceed site-specific screening criteria, but exceeded the New Jersey Groundwater Quality Criteria.

**: Criteria of 1000 µg/L is for total xylenes (m,p-xylene plus o-xylene).

Table 3-3
Summary of Detected VOCs, SVOCs and Metals
Year 7 Groundwater Sampling
Federal Creosote Superfund Site
Manville, New Jersey

Chemical Name	Sample Code Sample Name Sample Date Unit \\ Depth	Site-Specific Screening Criteria	NJDEP GWQS *	MW-110S-Y7 10/20/2011 16.7 to 31.7 ft. bgs		MW-111D-Y7 10/19/2011 182 to 192 ft. bgs		MW-111I-Y7 10/19/2011 55 to 65 ft. bgs		MW-111S-Y7 10/19/2011 31.8 to 36.8 ft. bgs		MW-114D-Y7 10/17/2011 168 to 178 ft. bgs		MW-114D-DUP MW-614D-Y7 10/17/2011 168 to 178 ft. bgs	
(Group Description)															
Volatile Organic Compounds															
Carbon Disulfide	µg/L	NA	700	-----	U	-----	UJ	-----	U	-----	U	-----	U	-----	U
trans-1,2-Dichloroethene	µg/L	NA	100	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Methyl Tert-Butyl Ether	µg/L	NA	70	-----	U	-----	U	-----	U	0.19	J	-----	U	-----	U
cis-1,2-Dichloroethene	µg/L	NA	70	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Chloroform	µg/L	NA	70	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
1,1,1-Trichloroethane	µg/L	NA	30	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Carbon Tetrachloride	µg/L	NA	0.4	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Benzene	µg/L	1	0.2	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Trichloroethene	µg/L	NA	1	-----	U	-----	U	0.74		0.84		-----	U	-----	U
Toluene	µg/L	600	600	-----	U	-----	U	-----	U	2		-----	U	-----	U
Tetrachloroethene	µg/L	NA	0.4	-----	U	-----	U	1.8		20		-----	U	-----	U
Metylcyclohexane	µg/L	NA	100	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Ethylbenzene	µg/L	700	700	-----	U	-----	U	-----	U	5.5		-----	U	-----	U
m,p-Xylene**	µg/L	1000	1000	-----	U	-----	U	-----	U	11		-----	U	-----	U
O-XYLENE**	µg/L	1000	1000	-----	U	-----	U	-----	U	14		-----	U	-----	U
Styrene	µg/L	100	100	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Isopropylbenzene	µg/L	700	700	-----	U	-----	U	-----	U	5.1		-----	U	-----	U
Semi-Volatile Organic Compounds															
2-Methylphenol	µg/L	5	5	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
4-Methylphenol	µg/L	5	5	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
2,4-Dimethylphenol	µg/L	100	100	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Naphthalene	µg/L	300	300	-----	U	-----	U	11		860		-----	U	-----	U
2-Methylnaphthalene	µg/L	30	30	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
1,1'Biphenyl	µg/L	400	400	-----	U	-----	U	-----	U	160		-----	U	-----	U
Acenaphthylene	µg/L	100	100	-----	U	-----	U	-----	U	9.4		-----	U	-----	U
Acenaphthene	µg/L	400	400	-----	U	-----	U	4.8	J	260		-----	U	-----	U
Dibenzofuran	µg/L	100	100	-----	U	-----	U	5.8		290		-----	U	-----	U
Fluorene	µg/L	300	300	-----	U	-----	U	-----	U	59		-----	U	-----	U
Phenanthrene	µg/L	100	100	-----	U	-----	U	-----	U	130		-----	U	-----	U
Anthracene	µg/L	2000	2000	-----	U	-----	U	-----	U	11		-----	U	-----	U
Carbazole	µg/L	5	5	-----	U	-----	U	2.8	J	260		-----	U	-----	U
Fluoranthene	µg/L	300	300	-----	U	-----	U	-----	U	18		-----	U	-----	U
Pyrene	µg/L	200	200	-----	U	-----	U	-----	U	9.5		-----	U	-----	U
Benzo(a)anthracene	µg/L	5	0.05	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Chrysene	µg/L	5	5	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Benzo(b)fluoranthene	µg/L	5	0.05	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Benzo(k)fluoranthene	µg/L	5	0.5	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Benzo(a)pyrene	µg/L	5	0.005	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Indeno(1,2,3-cd)pyrene	µg/L	5	0.05	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Dibenz(a,h)anthracene	µg/L	0.005	0.005	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Benzo(g,h,i)perylene	µg/L	100	100	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Inorganic Analytes															
Iron	µg/L	300	300	125		378		1210		5990		591		599	
Manganese	µg/L	50	50	-----	U	23.6		27.6		13700		356		373	

Notes:

U: non-detect; J: Estimated result; R: Rejected, L: Biased low

µg/L: microgram per liter

*: New Jersey Department of Environmental Protection Groundwater Quality Standards

Results of creosote-realted compounds in bold and yellow shade exceeded the site-specific screening criteria.

Results in green shade did not exceed site-specific screening criteria, but exceeded the New Jersey Groundwater Quality Criteria.

**: Criteria of 1000 µg/L is for total xylenes (m,p-xylene plus o-xylene).

Table 3-3
Summary of Detected VOCs, SVOCs and Metals
Year 7 Groundwater Sampling
Federal Creosote Superfund Site
Manville, New Jersey

Chemical Name	Sample Code Sample Name Sample Date Unit \\ Depth	Site-Specific Screening Criteria	NJDEP GWQS *	MW-114I-Y7 10/17/2011 60 to 70 ft. bgs		MW-114S-Y7 10/17/2011 6.6 to 19.6 ft. bgs		MW-116I-Y7 10/18/2011 61.3 to 71.3 ft. bgs		MW-123D-Y7 10/20/2011 188 to 198 ft. bgs		MW-123I-Y7 10/20/2011 50 to 60 ft. bgs		MW-123S-Y7 10/20/2011 17 to 32 ft. bgs	
(Group Description)															
Volatile Organic Compounds															
Carbon Disulfide	µg/L	NA	700	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
trans-1,2-Dichloroethene	µg/L	NA	100	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Methyl Tert-Butyl Ether	µg/L	NA	70	0.55		-----	U	-----	U	-----	U	-----	U	-----	U
cis-1,2-Dichloroethene	µg/L	NA	70	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Chloroform	µg/L	NA	70	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
1,1,1-Trichloroethane	µg/L	NA	30	-----	U	-----	U	-----	U	-----	U	-----	U	0.26	J
Carbon Tetrachloride	µg/L	NA	0.4	-----	U	-----	U	-----	U	0.28	J	0.44	J	-----	U
Benzene	µg/L	1	0.2	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Trichloroethene	µg/L	NA	1	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Toluene	µg/L	600	600	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Tetrachloroethene	µg/L	NA	0.4	-----	U	-----	U	-----	U	0.18	J	0.32	J	0.5	
Metylcyclohexane	µg/L	NA	100	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Ethylbenzene	µg/L	700	700	-----	U	-----	U	8		-----	U	-----	U	-----	U
m,p-Xylene**	µg/L	1000	1000	-----	U	-----	U	5.7		-----	U	-----	U	-----	U
O-XYLENE**	µg/L	1000	1000	-----	U	-----	U	5.9		-----	U	-----	U	-----	U
Styrene	µg/L	100	100	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Isopropylbenzene	µg/L	700	700	0.21	J	-----	U	3.4		-----	U	-----	U	-----	U
Semi-Volatile Organic Compounds															
2-Methylphenol	µg/L	5	5	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
4-Methylphenol	µg/L	5	5	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
2,4-Dimethylphenol	µg/L	100	100	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Naphthalene	µg/L	300	300	-----	U	-----	U	350		-----	U	-----	U	-----	U
2-Methylnaphthalene	µg/L	30	30	-----	U	-----	U	2.6	J	-----	U	-----	U	-----	U
1,1'Biphenyl	µg/L	400	400	-----	U	-----	U	26		-----	U	-----	U	-----	U
Acenaphthylene	µg/L	100	100	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Acenaphthene	µg/L	400	400	15		-----	U	44		-----	U	-----	U	-----	U
Dibenzofuran	µg/L	100	100	-----	U	-----	U	79		-----	U	-----	U	-----	U
Fluorene	µg/L	300	300	8.8		-----	U	27		-----	U	-----	U	-----	U
Phenanthrene	µg/L	100	100	-----	U	-----	U	44		-----	U	-----	U	-----	U
Anthracene	µg/L	2000	2000	-----	U	-----	U	5.2		-----	U	-----	U	-----	U
Carbazole	µg/L	5	5	-----	U	-----	U	44		-----	U	-----	U	-----	U
Fluoranthene	µg/L	300	300	3.8	J	-----	U	24		-----	U	-----	U	-----	U
Pyrene	µg/L	200	200	3.3	J	-----	U	14		-----	U	-----	U	-----	U
Benzo(a)anthracene	µg/L	5	0.05	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Chrysene	µg/L	5	5	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Benzo(b)fluoranthene	µg/L	5	0.05	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Benzo(k)fluoranthene	µg/L	5	0.5	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Benzo(a)pyrene	µg/L	5	0.005	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Indeno(1,2,3-cd)pyrene	µg/L	5	0.05	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Dibenz(a,h)anthracene	µg/L	0.005	0.005	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Benzo(g,h,i)perylene	µg/L	100	100	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Inorganic Analytes															
Iron	µg/L	300	300	-----	U	104		126		2030		515		3260	
Manganese	µg/L	50	50	1790		-----	U	7080		51.9		523		243	

Notes:

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µg/L: microgram per liter

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Table 3-3
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Year 7 Groundwater Sampling
Federal Creosote Superfund Site
Manville, New Jersey

Chemical Name	Sample Code Sample Name Sample Date Unit \\ Depth	Site-Specific Screening Criteria	NJDEP GWQS *	MW-124D-Y7 10/18/2011 185 to 195 ft. bgs		MW-124I-Y7 10/18/2011 53.5 to 63.5 ft. bgs		MW-124S-Y7 10/18/2011 18 to 33 ft. bgs		MW-125I-Y7 10/18/2011 48 to 58 ft. bgs		MW-125S-Y7 10/18/2011 6 to 21 ft. bgs		MW-126S-Y7 10/19/2011 13.5 to 28.5 ft. bgs		MW-127S-Y7 10/25/2011 20.5 to 35.5 ft. bgs	
(Group Description)																	
Volatile Organic Compounds																	
Carbon Disulfide	µg/L	NA	700	-----	U	-----	U	-----	U	-----	U	-----	U	-----	UJ	-----	U
trans-1,2-Dichloroethene	µg/L	NA	100	-----	U	-----	U	-----	U	-----	UJ	-----	U	-----	U	-----	U
Methyl Tert-Butyl Ether	µg/L	NA	70	-----	U	-----	U	-----	U	0.24	J	-----	U	-----	U	-----	U
cis-1,2-Dichloroethene	µg/L	NA	70	-----	U	-----	U	-----	U	-----	UJ	-----	U	-----	U	-----	U
Chloroform	µg/L	NA	70	-----	U	-----	U	-----	U	-----	UJ	-----	U	-----	UJ	2.2	
1,1,1-Trichloroethane	µg/L	NA	30	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Carbon Tetrachloride	µg/L	NA	0.4	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Benzene	µg/L	1	0.2	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Trichloroethene	µg/L	NA	1	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Toluene	µg/L	600	600	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Tetrachloroethene	µg/L	NA	0.4	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	77	
Metylcyclohexane	µg/L	NA	100	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Ethylbenzene	µg/L	700	700	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
m,p-Xylene**	µg/L	1000	1000	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
O-XYLENE**	µg/L	1000	1000	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Styrene	µg/L	100	100	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Isopropylbenzene	µg/L	700	700	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Semi-Volatile Organic Compounds																	
2-Methylphenol	µg/L	5	5	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
4-Methylphenol	µg/L	5	5	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
2,4-Dimethylphenol	µg/L	100	100	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Naphthalene	µg/L	300	300	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
2-Methylnaphthalene	µg/L	30	30	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
1,1'Biphenyl	µg/L	400	400	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Acenaphthylene	µg/L	100	100	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Acenaphthene	µg/L	400	400	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Dibenzofuran	µg/L	100	100	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Fluorene	µg/L	300	300	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Phenanthrene	µg/L	100	100	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Anthracene	µg/L	2000	2000	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Carbazole	µg/L	5	5	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Fluoranthene	µg/L	300	300	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Pyrene	µg/L	200	200	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Benzo(a)anthracene	µg/L	5	0.05	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Chrysene	µg/L	5	5	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Benzo(b)fluoranthene	µg/L	5	0.05	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Benzo(k)fluoranthene	µg/L	5	0.5	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Benzo(a)pyrene	µg/L	5	0.005	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Indeno(1,2,3-cd)pyrene	µg/L	5	0.05	-----	U	-----	UJ	-----	U	-----	U	-----	U	-----	U	-----	U
Dibenz(a,h)anthracene	µg/L	0.005	0.005	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Benzo(g,h,i)perylene	µg/L	100	100	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U	-----	U
Inorganic Analytes																	
Iron	µg/L	300	300	305		977		8520		159		1100		1450		4150	
Manganese	µg/L	50	50	-----	U	48		253		-----	U	31		18		135	

Notes:

U: non-detect; J: Estimated result; R: Rejected, L: Biased low

µg/L: microgram per liter

*: New Jersey Department of Environmental Protection Groundwater Quality Standards

Results of creosote-realted compounds in bold and yellow shade exceeded the site-specific screening criteria.

Results in green shade did not exceed site-specific screening criteria, but exceeded the New Jersey Groundwater Quality Criteria.

**: Criteria of 1000 µg/L is for total xylenes (m,p-xylene plus o-xylene).

Table 3-4
Creosote-Related Contaminant Concentration Trend
Year 7 Groundwater Sampling
Federal Creosote Superfund Site
Manville, New Jersey

Chemical Name	Site-Specific Screening Criteria	Sample Code	MW-2RS					MW-2I			MW-2RI				
		Sample Date// Unit	11/19/2007	11/20/2008	10/29/2009	10/19/2010	10/21/2011	7/27/1999	11/12/1999		11/19/2007	11/20/2008	10/29/2009	10/19/2010	10/21/2011
Benzene	1	µg/L	**23**	50 U	**26**	**19**	**62**	25 U	100 U	Well Abandoned During Remediation	**2.4**	50 U	**1.7**	**1.7**	**1.9**
Toluene	600	µg/L	38	31 J	43	37	49	23 J	100 U		4.3	50 U	3.3	3.4	4.3
Ethylbenzene	700	µg/L	97	100	160	150	210	240	160		70	47 J	54	58	54
Xylenes (total)	1000	µg/L	135	75	320	250	430	350	170		74.3	39 J	111	97	104
Styrene	100	µg/L	15	11 J	9.1	6.7	23	25 U	100 U		2.7	50 U	2 U	0.52	0.5 U
Isopropylbenzene	700	µg/L	30	25 J	38	36	26	NA	NA		21	15 J	20	21	17
Phenol	2000	µg/L	5 U	500 U	50 U	100 U	5 UJ	2,000 U	10 U		5 U	500 U	50 U	100 U	5 UJ
2-Methylphenol	5	µg/L	5 U	500 U	50 U	100 U	**7**	2,000 U	10 U		5 U	500 U	50 U	100 U	5 U
4-Methylphenol	5	µg/L	5 U	500 U	1.7 J	100 U	**8.6**	2,000 U	10 U		5 U	500 U	50 U	100 U	5 U
2,4-Dimethylphenol	100	µg/L	3.9 J	500 U	6.1 J	5.1 J	35	2,000 U	10 U		5 U	500 U	50 U	100 U	5 U
Naphthalene	300	µg/L	**5,500**	**5700**	**6000 J**	**6000**	**11000**	**7,600**	**6,500**		**6,100**	**5300**	**3800 J**	**5100**	**5700**
2-Methylnaphthalene	100	µg/L	**170**	95 J	96	**120**	**200**	**320 J**	**150 J**		**360**	**190 J**	**120**	**200**	**220**
1,1'Biphenyl	400	µg/L	120	140 J	150	160	150	NA	NA		120	130 J	150	120	140
Acenaphthylene	100	µg/L	16	500 U	13 J	12 J	13	2,000 U	4 J		7.2	500 U	4.9 J	5.2 J	4.4 J
Acenaphthene	400	µg/L	300	**470 J**	**440**	**510**	**460**	330 J	170 J		280	**430 J**	**420**	300	380
Dibenzofuran	100	µg/L	**240**	**330 J**	**330**	**310**	**330**	**320 J**	**160 J**		**240**	**330 J**	**320**	**280**	**330**
Fluorene	300	µg/L	190 J	240 J	200	200	210	220 J	100 J		190 J	250 J	220	210	220
Phenanthrene	100	µg/L	**160**	**210 J**	**210**	**240**	**200**	**170 J**	**110 J**		**180**	**270 J**	**230**	**240**	**250**
Anthracene	2000	µg/L	14 J	18 J	12 J	14 J	11	14 J	10		16 J	27 J	18 J	23 J	18
Carbazole	5	µg/L	**210**	**410 J**	**250**	**310**	**260**	**270 J**	**230 J**		**200**	**340 J**	**250**	**260**	**250**
Fluoranthene	300	µg/L	18	500 U	14 J	17 J	13	2,000 U	9 J		20	23 J	21 J	24 J	24
Pyrene	200	µg/L	9.3	500 U	9.5 J	7.9 J	7.1	2,000 U	6 J		9.5	500 U	11 J	14 J	13
Benzo(a)anthracene	5	µg/L	5 U	500 U	0.5 UJ	2 U	5 U	2,000 U	10 U		5 U	500 U	1.2 J	2 U	5 U
Chrysene	5	µg/L	5 U	500 U	1.6 J	2 U	5 U	2,000 U	10 U		5 U	500 U	0.54 J	2 U	5 U
Benzo(b)fluoranthene	5	µg/L	5 U	500 U	1.6 J	2 U	5 U	2,000 U	10 U		5 U	500 U	0.5 UJ	2 U	5 U
Benzo(k)fluoranthene	5	µg/L	5 U	500 U	0.5 UJ	2 U	5 U	2,000 U	10 U		5 U	500 U	0.13 J	2 U	5 U
Benzo(a)pyrene	5	µg/L	5 U	500 U	0.11 J	2 U	5 U	2,000 U	10 U		5 U	500 U	0.25 J	2 U	5 U
Indeno(1,2,3-cd)pyrene	5	µg/L	5 U	500 U	0.5 UJ	2 U	5 U	2,000 U	10 U		5 U	500 U	0.5 UJ	2 U	5 U
Benzo(g,h,i)perylene	5	µg/L	5 U	500 U	**50 J**	2 U	5 U	2,000 U	10 U		5 U	500 U	0.5 UJ	2 U	5 U

Notes:
Results in bold and yellow shade exceeded site-specific criteria.
J: Estimated value NA: Not analyzed
U: Non-detect R: Rejected
µg/L: Microgram per liter
UJ: Non-detect, the reporting limit is estimated

Table 3-4
Creosote-Related Contaminant Concentration Trend
Year 7 Groundwater Sampling
Federal Creosote Superfund Site
Manville, New Jersey

Chemical Name	**Site-Specific Screening Criteria**	**Sample Code**	**MW-2D**			**MW-2RD**				
		Sample Date// Unit	7/27/1999	11/11/1999		11/19/2007	11/20/2008	10/29/2009	10/19/2010	10/21/2011
Benzene	1	µg/L	**45**	**4**		**12**	**5.2**	**3.6**	**2.1**	**1.3**
Toluene	600	µg/L	25	2		9.8	3.1 J	2.4	1.5	0.5 U
Ethylbenzene	700	µg/L	48	4		59	11	8.3	5.9	4.9
Xylenes (total)	1000	µg/L	340	28		68.8	19	31.7	8.2	4.3 U
Styrene	100	µg/L	25 U	1 U		3.4	5 U	2 U	0.5 U	0.5 U
Isopropylbenzene	700	µg/L	NA	NA		15	3.4 J	4.2	3.6	3.1
Phenol	2000	µg/L	2,000 U	10 U		5 U	150 U	5 U	5 U	5.1 UJ
2-Methylphenol	5	µg/L	2,000 U	10 U		5 U	150 U	0.54 J	0.57 J	5.1 U
4-Methylphenol	5	µg/L	2,000 U	10 U		5 U	150 U	0.62 J	0.54 J	5.1 U
2,4-Dimethylphenol	100	µg/L	2,000 U	10 U		5 U	150 U	0.45 J	0.77 J	5.1 U
Naphthalene	300	µg/L	**6,000**	**7,400**		**3,200**	**1600**	170 J	**510**	29
2-Methylnaphthalene	100	µg/L	**450 J**	**470 J**		**200**	22 J	0.1 U	12	5.1 U
1,1'Biphenyl	400	µg/L	NA	NA	**Well Abandoned During Remediation**	73	47 J	12	26	19
Acenaphthylene	100	µg/L	2,000 U	9 J		10	150 U	0.41 J	1.3 J	5.1 U
Acenaphthene	400	µg/L	220 J	170 J		190	120 J	20	50	31
Dibenzofuran	100	µg/L	**260 J**	**170 J**		**180**	**110 J**	21	48	34
Fluorene	300	µg/L	150 J	93 J		140 J	62 J	11	27	16
Phenanthrene	100	µg/L	**170 J**	**110 J**		**160**	86 J	6.8	27	13
Anthracene	2000	µg/L	14 J	9 J		15 J	9.5 J	0.86 J	1.7 J	5.1 U
Carbazole	5	µg/L	**250 J**	**210 J**		**150**	**110 J**	**40**	**71**	**42**
Fluoranthene	300	µg/L	28 J	10		21	12 J	1.2 J	3.7 J	5.1 U
Pyrene	200	µg/L	2,000 U	6 J		9.9	7 J	0.77	2.3 J	5.1 U
Benzo(a)anthracene	5	µg/L	2,000 U	1 J		5 U	150 U	0.26	0.37 J	5.1 U
Chrysene	5	µg/L	2,000 U	1 J		5 U	150 U	0.085 J	2 U	5.1 U
Benzo(b)fluoranthene	5	µg/L	2,000 U	10 U		5 U	150 U	0.14	2 U	5.1 U
Benzo(k)fluoranthene	5	µg/L	2,000 U	10 U		5 U	150 U	0.055 J	2 U	5.1 U
Benzo(a)pyrene	5	µg/L	2,000 U	10 U		5 U	150 U	0.11	2 U	5.1 U
Indeno(1,2,3-cd)pyrene	5	µg/L	2,000 U	10 U		5 U	150 U	0.1 U	2 U	5.1 U
Benzo(g,h,i)perylene	5	µg/L	2,000 U	10 U		5 U	150 U	0.1 UJ	2 U	5.1 U

Notes:
Results in bold and yellow shade exceeded site-specific criteria.
J: Estimated value NA: Not analyzed
U: Non-detect R: Rejected
µg/L: Microgram per liter
UJ: Non-detect, the reporting limit is estimated

Table 3-4
Creosote-Related Contaminant Concentration Trend
Year 7 Groundwater Sampling
Federal Creosote Superfund Site
Manville, New Jersey

Chemical Name	Site-Specific Screening Criteria	Sample Code	MW-5I								
		Sample Date// Unit	7/29/1999	11/15/1999	11/11/2005	10/25/2006	11/20/2007	11/24/2008	11/2/2009	10/25/2010	10/25/2011
Benzene	1	µg/L	**12**	**12 J**	**7.2 J**	**5.4**	**3.4**	50 U	**2.3**	**2.5**	0.5 U
Toluene	600	µg/L	29	25	28	23	18	14 J	17	16	3.6
Ethylbenzene	700	µg/L	48	45	72 J	73	61	45 J	58 J	58	24
Xylenes (total)	1000	µg/L	130	130	180 J	162	79	42 J	139 J	125	60
Styrene	100	µg/L	10	13 J	6.7	0.5 U	6.6	50 U	2.9	2	0.5 U
Isopropylbenzene	700	µg/L	NA	NA	9.9 J	10	8.1	50 U	11	13	6.1
Phenol	2000	µg/L	2,000 U	10 U	10 U	5 U	5 U	1000 U	50 UJ	5 U	5.1 UJ
2-Methylphenol	5	µg/L	2,000 U	10 U	10 U	5 U	5 U	1000 U	50 U	5 U	5.1 U
4-Methylphenol	5	µg/L	2,000 U	10 U	10 U	5 U	5 U	1000 U	4.7 J	**17**	5.1 U
2,4-Dimethylphenol	100	µg/L	2,000 U	10 UJ	10 U	5 U	5 U	1000 U	50 U	5 U	5.1 U
Naphthalene	300	µg/L	**6,600**	**11,000**	**7,500**	**2,100 J**	**8,000**	**11000**	**7,900 J**	**9100**	**4100**
2-Methylnaphthalene	100	µg/L	**860 J**	**840**	**940 J**	**690 J**	**550**	**700 J**	**730**	**1500 J**	**440**
1,1'Biphenyl	400	µg/L	NA	NA	100 J	110 J	74	98 J	100	95 J	45
Acenaphthylene	100	µg/L	66 J	73	10 U	6.7	12	1000 U	6.5 J	5.4	4.4 J
Acenaphthene	400	µg/L	340 J	340	**450 J**	390 J	280	340 J	340	**450 J**	200
Dibenzofuran	100	µg/L	2,000 U	**300 J**	**380 J**	**290 J**	**240**	**260 J**	**260**	**310 J**	**160**
Fluorene	300	µg/L	280 J	220 J	320 J	230 J	210 J	200 J	200	230 J	130
Phenanthrene	100	µg/L	2,000 U	**220 J**	**270 J**	**210 J**	**200**	**260 J**	**240**	**240 J**	86
Anthracene	2000	µg/L	23 J	21	16	17	15 J	1000 U	19 J	14	8.4
Carbazole	5	µg/L	**420 J**	**500 J**	**640 J**	**390 J**	**300**	**380 J**	**390**	**690 J**	**78**
Fluoranthene	300	µg/L	24 J	20	24	21	34	31 J	27 J	18	41
Pyrene	200	µg/L	2,000 U	13	17	12	20	1000 U	17 J	11	29
Benzo(a)anthracene	5	µg/L	2,000 U	2 J	1 J	1.7 J	**5.9**	1000 U	4.2 J	1.2 J	**12**
Chrysene	5	µg/L	2,000 U	1 J	1 J	1.2 J	**5.7 J**	1000 U	3.2 J	0.73 J	**10**
Benzo(b)fluoranthene	5	µg/L	2,000 U	10 U	10 U	0.86 J	3.4 J	1000 U	3.3 J	0.63 J	**10**
Benzo(k)fluoranthene	5	µg/L	2,000 U	1 J	10 U	5 U	5 U	1000 U	0.84 J	0.29 J	4.2 J
Benzo(a)pyrene	5	µg/L	2,000 U	1 J	10 U	5 U	3.2 J	1000 U	2.1 J	0.25 J	**8**
Indeno(1,2,3-cd)pyrene	5	µg/L	2,000 U	10 U	10 U	5 U	5 U	1000 U	1.6 J	5 U	4.6 J
Benzo(g,h,i)perylene	5	µg/L	2,000 U	10 U	10 U	5 U	5 U	1000 U	0.89 J	5 U	3.4 J

Notes:
Results in bold and yellow shade exceeded site-specific criteria.
J: Estimated value NA: Not analyzed
U: Non-detect R: Rejected
µg/L: Microgram per liter
UJ: Non-detect, the reporting limit is estimated

Table 3-4
Creosote-Related Contaminant Concentration Trend
Year 7 Groundwater Sampling
Federal Creosote Superfund Site
Manville, New Jersey

Chemical Name	Site-Specific Screening Criteria	Sample Code	MW-6S								
		Sample Date// Unit	2/25/1999	11/17/1999	11/11/2005	10/26/2006	11/20/2007	11/24/2008	11/2/2009	10/25/2010	10/25/2011
Benzene	1	µg/L	**46 J**	**68**	**3.4**	**31**	**25**	50 U	**11**	**2.8**	**11**
Toluene	600	µg/L	74 J	64 U	4.1	99	95	75	75	51	25
Ethylbenzene	700	µg/L	100 U	32	3.3	74	81	71	66	59	28
Xylenes (total)	1000	µg/L	100 U	94	8.7	178	176	54	177	158	65
Styrene	100	µg/L	100 U	17 J	1.3 J	29	23	14 J	24	35	6.4
Isopropylbenzene	700	µg/L	NA	NA	0.27 J	8.6	9.3	50 U	9.4	7.3	3.9
Phenol	2000	µg/L	99 U	37 J	10 U	5 U	5 U	1000 U	100 UJ	250 U	5 UJ
2-Methylphenol	5	µg/L	**83 J**	**150 J**	**12**	4.7 J	5 U	1000 U	**5.1 J**	250 U	**17**
4-Methylphenol	5	µg/L	**54 J**	**85 J**	10 U	3 J	5 U	1000 U	4.4 J	250 U	**7.2**
2,4-Dimethylphenol	100	µg/L	**770**	**470 J**	67	5 U	33	1000 U	54 J	14 J	**170**
Naphthalene	300	µg/L	**11,000**	**10,000 J**	**3,000 J**	**14,000**	**8000**	**13000**	**9,300 J**	**12000**	**5800**
2-Methylnaphthalene	100	µg/L	**750**	**640 J**	**630 J**	**660 J**	**450**	**700 J**	**890**	**590**	**450**
1,1'Biphenyl	400	µg/L	NA	NA	94 J	120 J	71	94 J	140	110 J	60
Acenaphthylene	100	µg/L	99 U	30 J	73	83 J	51	84 J	61 J	40 J	38
Acenaphthene	400	µg/L	300	360 J	350 J	390 J	270	380 J	**520**	**450**	300
Dibenzofuran	100	µg/L	**230**	**270 J**	**310 J**	**330 J**	**240**	**270 J**	**320**	**330**	**240**
Fluorene	300	µg/L	200	210 J	230 J	260 J	200 J	230 J	**360**	**300**	230
Phenanthrene	100	µg/L	**210**	**260 J**	**240 J**	**210 J**	**180**	**290 J**	**440**	**550**	**430**
Anthracene	2000	µg/L	15 J	22 J	13	19	14 J	1000 U	40 J	49 J	35
Carbazole	5	µg/L	**440**	**410 J**	**450 J**	**380 J**	**290**	**460 J**	**540**	**590**	**170**
Fluoranthene	300	µg/L	22 J	41 J	24	29	25	44 J	140	220 J	260
Pyrene	200	µg/L	11 J	28 J	19	19	15	36 J	89 J	150 J	190
Benzo(a)anthracene	5	µg/L	99 U	**5 J**	3 J	3.1 J	3.6 J	1000 U	**31 J**	**59 J**	**64**
Chrysene	5	µg/L	99 U	4 J	2 J	2.3 J	3.2 J	1000 U	**25 J**	**49 J**	**53**
Benzo(b)fluoranthene	5	µg/L	99 U	2 J	1 J	5 U	2.2 J	1000 U	**19 J**	**19 J**	**57**
Benzo(k)fluoranthene	5	µg/L	99 U	2 J	10 U	5 U	5 U	1000 U	**7.5 J**	**41 J**	**19**
Benzo(a)pyrene	5	µg/L	99 U	3 J	1 J	1.3 J	1.8 J	1000 U	**14 J**	**32 J**	**40**
Indeno(1,2,3-cd)pyrene	5	µg/L	99 U	10 UJ	10 U	5 U	5 U	1000 U	**7.9 J**	**15**	**28 J**
Benzo(g,h,i)perylene	5	µg/L	99 U	10 UJ	10 U	5 U	5 U	1000 U	**6.1 J**	**11**	**18**

Notes:
Results in bold and yellow shade exceeded site-specific criteria.
J: Estimated value NA: Not analyzed
U: Non-detect R: Rejected
µg/L: Microgram per liter
UJ: Non-detect, the reporting limit is estimated

Table 3-4
Creosote-Related Contaminant Concentration Trend
Year 7 Groundwater Sampling
Federal Creosote Superfund Site
Manville, New Jersey

Chemical Name	Site-Specific Screening Criteria	Sample Code	MW-7S								
		Sample Date// Unit	2/24/1999	11/17/1999	11/10/2005	10/26/2006	11/20/2007	11/24/2008	10/29/2009	10/25/2010	10/25/2011
Benzene	1	µg/L	**25**	**32**	**16 J**	**9 J**	**13**	50 U	**5.1**	**5.5**	**2.1**
Toluene	600	µg/L	44 U	25 U	23 J	47	67	53	41	50	11
Ethylbenzene	700	µg/L	14 J	11 J	20 J	27	44	31 J	39	45	11
Xylenes (total)	1000	µg/L	52 X	53 X	51	70	111	29 J	89	117	40
Styrene	100	µg/L	25 U	13 J	9.2 J	11	12	50 U	7.3	18	5.3
Isopropylbenzene	700	µg/L	NA	NA	2.3 J	2.1	3.1	50 U	3	2.6	0.86
Phenol	2000	µg/L	7 J	10 U	10 U	5 U	5 U	500 U	100 U	100 U	5.1 UJ
2-Methylphenol	5	µg/L	**64**	**29**	3 J	4.8 J	5 U	500 U	100 U	4.4 J	5.1 U
4-Methylphenol	5	µg/L	**44 J**	**31**	10 U	4.8 J	5 U	500 U	**5 J**	100 U	5.1 U
2,4-Dimethylphenol	100	µg/L	**360**	**280 J**	36	30	8.9	500 U	23 J	14 J	13
Naphthalene	300	µg/L	**3,700**	**6,600**	**1800**	**5400**	**4900**	**7200**	**5,600 J**	**7100**	**7200**
2-Methylnaphthalene	100	µg/L	**450 J**	**510 J**	**300 J**	**280 J**	**250**	**510**	**370**	**350**	**270**
1,1'Biphenyl	400	µg/L	NA	NA	62	110 J	64	170 J	140	85 J	76
Acenaphthylene	100	µg/L	49	74	60	92 J	50	**110 J**	**110 J**	64 J	80
Acenaphthene	400	µg/L	230	340 J	330 J	360 J	250	**780**	**540**	360	**430**
Dibenzofuran	100	µg/L	**150**	**220 J**	**260 J**	**290 J**	**230**	**600**	**440**	**260**	**320**
Fluorene	300	µg/L	160	160	270 J	260 J	200 J	**660**	**430**	210	**320**
Phenanthrene	100	µg/L	**250**	**220 J**	**370 J**	**230 J**	**200**	**1800**	**850**	**320**	**640**
Anthracene	2000	µg/L	28 J	21	21	22	13 J	150 J	84 J	25 J	51
Carbazole	5	µg/L	**210**	**290 J**	**340 J**	**270 J**	**210**	**340 J**	**280**	**360**	**180**
Fluoranthene	300	µg/L	87	41	74	64 J	33	**880**	**550**	85 J	**490**
Pyrene	200	µg/L	72	33	55	48	20	**720**	**240 J**	62 J	**340**
Benzo(a)anthracene	5	µg/L	**21 J**	**6 J**	**10**	**12**	4.6 J	**280 J**	**190**	**18 J**	**140**
Chrysene	5	µg/L	**14 J**	4 J	**8 J**	**7.9**	3.5 J	**170 J**	**110**	**11 J**	**76**
Benzo(b)fluoranthene	5	µg/L	**9 J**	3 J	**7 J**	**7.1**	5 U	**150 J**	**140**	**10 J**	**120**
Benzo(k)fluoranthene	5	µg/L	**13 J**	4 J	2 J	2.7 J	5 U	**64 J**	**36 J**	**5.3 J**	**27**
Benzo(a)pyrene	5	µg/L	**11 J**	3 J	**5 J**	**5.5**	5 U	**120 J**	**90 J**	**8.3 J**	**64**
Indeno(1,2,3-cd)pyrene	5	µg/L	48 U	1 J	3 J	2.1 J	5 U	**60 J**	**58 J**	3.9	**45 J**
Benzo(g,h,i)perylene	5	µg/L	48 U	1 J	2 J	2.1 J	5 U	**46 J**	**43 J**	2.9	**28**

Notes:
Results in bold and yellow shade exceeded site-specific criteria.
J: Estimated value NA: Not analyzed
U: Non-detect R: Rejected
µg/L: Microgram per liter
UJ: Non-detect, the reporting limit is estimated

Table 3-4
Creosote-Related Contaminant Concentration Trend
Year 7 Groundwater Sampling
Federal Creosote Superfund Site
Manville, New Jersey

Chemical Name	Site-Specific Screening Criteria	Sample Code	MW-12S			MW-12RS				
		Sample Date// Unit	2/22/1999	11/16/1999		11/16/2007	11/21/2008	10/26/2009	10/14/2010	10/24/2011
Benzene	1	µg/L	100 U	25 U		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	600	µg/L	100 U	13 J		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	700	µg/L	77	55		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Xylenes (total)	1000	µg/L	170	150 X		0.5 U	0.5 U	1 U	1 U	1 U
Styrene	100	µg/L	100 U	25 U		0.5 U	0.5 U	2 U	0.5 U	0.5 U
Isopropylbenzene	700	µg/L	NA	NA		0.5 U	0.5 U	1 U	1.1	0.24 J
Phenol	2000	µg/L	750 U	400 U		5 U	5 U	5 U	5 U	5.1 UJ
2-Methylphenol	5	µg/L	750 U	400 U		5 U	5 U	5 U	5 U	5.1 U
4-Methylphenol	5	µg/L	750 U	400 U		5 U	5 U	5 U	5 U	5.1 U
2,4-Dimethylphenol	100	µg/L	750 U	400 U		5 U	5 U	5 U	5 U	5.1 U
Naphthalene	300	µg/L	**9,700**	**13,000**		5 U	5 U	0	1 U	5.1 U
2-Methylnaphthalene	100	µg/L	**380 J**	**540**		5 U	5 U	0.1 U	1 U	5.1 U
1,1'Biphenyl	400	µg/L	NA	NA	**Well Abandoned During Remediation**	5 U	5 U	5 U	0.49 J	5.1 U
Acenaphthylene	100	µg/L	97 J	**160 J**		5 U	0.26 J	0.54 J	1.6 J	5.1 U
Acenaphthene	400	µg/L	380 J	**570**		14	3.5 J	11	46	8.7
Dibenzofuran	100	µg/L	**250 J**	**430**		13	13	20	77	16
Fluorene	300	µg/L	190 J	**350 J**		3.8 J	0.72 J	3.2 J	11	4.3 J
Phenanthrene	100	µg/L	**270 J**	**350 J**		5 U	0.19 J	0.41 J	1.9 J	5.1 U
Anthracene	2000	µg/L	750 U	400 U		5 U	0.4 J	0.92 J	3.5 J	5.1 U
Carbazole	5	µg/L	**660 J**	**780**		**8**	**5.3**	**14**	**79**	**13**
Fluoranthene	300	µg/L	750 U	400 U		5 U	1.8 J	3.5 J	13	4.4 J
Pyrene	200	µg/L	750 U	400 U		5 U	1.2 J	1.8 J	7.8	2.4 J
Benzo(a)anthracene	5	µg/L	750 U	400 U		5 U	5 U	0.015 J	1 U	5.1 U
Chrysene	5	µg/L	750 U	400 U		5 U	5 U	0.1 U	1 U	5.1 U
Benzo(b)fluoranthene	5	µg/L	750 U	400 U		5 U	5 U	0.1 U	1 U	5.1 U
Benzo(k)fluoranthene	5	µg/L	750 U	400 U		5 U	5 U	0.1 U	1 U	5.1 U
Benzo(a)pyrene	5	µg/L	750 U	400 U		5 U	5 U	0.1 U	1 U	5.1 U
Indeno(1,2,3-cd)pyrene	5	µg/L	750 U	400 U		5 U	5 U	0.1 U	1 U	5.1 U
Benzo(g,h,i)perylene	5	µg/L	750 U	400 U		5 U	5 U	0.1 U	1 U	5.1 U

Notes:
Results in bold and yellow shade exceeded site-specific criteria.
J: Estimated value NA: Not analyzed
U: Non-detect R: Rejected
µg/L: Microgram per liter
UJ: Non-detect, the reporting limit is estimated

Table 3-4
Creosote-Related Contaminant Concentration Trend
Year 7 Groundwater Sampling
Federal Creosote Superfund Site
Manville, New Jersey

Chemical Name	Site-Specific Screening Criteria	Sample Code	MW-110I					MW-111S							
		Sample Date// Unit	11/24/2007	11/14/2008	10/28/2009	10/14/2010	10/20/2011	7/26/1999	11/12/1999	10/17/2006	11/15/2007	11/25/2008	10/22/2009	10/18/2010	10/19/2011
Benzene	1	µg/L	**1.8**	**1.2**	**1.3**	**1.1**	**1.1**	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	600	µg/L	0.5 U	0.19 J	0.5 U	0.5 U	0.5 U	1 U	1 U	0.5 U	1.5	0.5 U	0.5 U	2.2	2
Ethylbenzene	700	µg/L	3	0.12 J	0.5 U	0.5 U	0.81	1 U	1 U	0.5 U	2.3	0.5 U	0.73	4.2	5.5
Xylenes (total)	1000	µg/L	0.5 U	0.5 U	1 U	1 U	1 U	1 U	0.8 J	1.3	3.8	1.2	4.8	13.2	25
Styrene	100	µg/L	0.5 U	0.5 U	2 U	0.5 U	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U
Isopropylbenzene	700	µg/L	3.7	1.5	2.1	2.1	2.7	NA	NA	0.95	5.4	1.1	3.5	6.7	5.1
Phenol	2000	µg/L	5 UJ	5 U	5 U	5 U	5.1 UJ	0.2 J	10 U	5 U	5 U	5 U	5 U	5 U	5.1 UJ
2-Methylphenol	5	µg/L	5 UJ	5 U	5 U	5 U	5.1 U	10 U	10 U	5 UJ	5 U	5 U	5 U	5 U	5.1 U
4-Methylphenol	5	µg/L	5 UJ	5 U	5 U	5 U	5.1 U	10 U	10 U	5 UJ	5 U	0.34 J	5 U	0.35 J	5.1 U
2,4-Dimethylphenol	100	µg/L	5 UJ	5 U	5 U	5 U	5.1 U	10 U	10 U	5 UJ	5 U	5 U	5 U	0.46 J	5.1 U
Naphthalene	300	µg/L	5 UJ	3.7 J	0.33 J	0.1 U	4.8 J	10 U	10 U	92	61	11	26 J	89	**860**
2-Methylnaphthalene	100	µg/L	5 UJ	5 U	0.1 U	0.1 U	5.1 U	10 U	10 U	5 U	5 U	5 U	0.16 J	0.31 J	5.1 U
1,1'Biphenyl	400	µg/L	5 U	0.16 J	0.16 J	5 U	5.1 U	NA	NA	66	170	75	130	110	160
Acenaphthylene	100	µg/L	5 UJ	0.72 J	0.64 J	0.71 J	5.1 U	3 J	2 J	5 U	9.1	5.3	6.6	10	9.4
Acenaphthene	400	µg/L	3.3 J	29	25	32	28	38	33	84	200	200	160	230	260
Dibenzofuran	100	µg/L	5 U	0.24 J	0.26 J	0.35 J	5.1 U	26	41	**130**	**190**	**240**	**180**	**240**	**290**
Fluorene	300	µg/L	24	19	18	23	20	12	11	5.6	45	34	53	79	59
Phenanthrene	100	µg/L	4 J	0.46 J	0.14	0.15 J	5.1 U	10 U	45	52	66	76	**100**	**130**	**130**
Anthracene	2000	µg/L	5 UJ	1.5 J	0.98 J	0.56 J	5.1 U	2 J	6 J	5.2	7.3	9.5	10	10	11
Carbazole	5	µg/L	5 U	**40**	**37**	**59**	**44**	**24**	**30**	**88**	**110**	**240**	**170**	**260**	**260**
Fluoranthene	300	µg/L	3.1 J	2.2 J	1.8 J	2.4 J	2.2 J	21	12	10	14	16	12 J	11	18
Pyrene	200	µg/L	5 UJ	1.4 J	1.3 J	1.3 J	5.1 U	9 J	7 J	5.6	5.7	7.1	7	5.8	9.5
Benzo(a)anthracene	5	µg/L	5 UJ	5 U	0.027 J	0.1 U	5.1 U	0.5 J	10 U	5 U	5 U	0.45 J	0.54 J	0.42 J	5.1 U
Chrysene	5	µg/L	5 UJ	5 U	0.018 J	0.1 U	5.1 U	0.4 J	10 U	5 U	5 U	0.34 J	0.34 J	0.28 J	5.1 U
Benzo(b)fluoranthene	5	µg/L	5 R	5 U	0.018 J	0.1 U	5.1 U	10 U	10 U	5 U	5 U	5 U	0.17 J	1 U	5.1 U
Benzo(k)fluoranthene	5	µg/L	5 R	5 U	0.1 U	0.1 U	5.1 U	10 U	10 U	5 U	5 U	5 U	0.5 UJ	1 U	5.1 U
Benzo(a)pyrene	5	µg/L	5 R	5 U	0.016 J	0.1 U	5.1 U	10 U	10 U	5 U	5 U	5 U	0.11 J	1 U	5.1 U
Indeno(1,2,3-cd)pyrene	5	µg/L	5 R	5 U	0.1 U	0.1 U	5.1 U	10 U	10 U	5 U	5 U	5 UJ	0.5 U	1 U	5.1 U
Benzo(g,h,i)perylene	5	µg/L	5 R	5 U	0.1 U	0.1 U	5.1 U	10 U	10 U	5 U	5 U	5 U	0.5 U	1 U	5.1 U

Notes:
Results in bold and yellow shade exceeded site-specific criteria.
J: Estimated value NA: Not analyzed
U: Non-detect R: Rejected
µg/L: Microgram per liter
UJ: Non-detect, the reporting limit is estimated

Table 3-4
Creosote-Related Contaminant Concentration Trend
Year 7 Groundwater Sampling
Federal Creosote Superfund Site
Manville, New Jersey

Chemical Name	Site-Specific Screening Criteria	Sample Code	MW-114D								
		Sample Date// Unit	7/22/1999	11/9/1999	11/8/2005	10/19/2006	11/12/2007	11/18/2008	10/20/2009	10/11/2010	10/17/2011
Benzene	1	µg/L	**7**	**12**	0.19 J	0.5 U	0.57	0.5 U	**3.2**	0.5 U	0.5 U
Toluene	600	µg/L	1 U	0.9 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	700	µg/L	13	24	0.1 J	0.5 U	0.5 U	0.5 U	0.7	0.5 U	0.5 U
Xylenes (total)	1000	µg/L	0.6 J	2	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U
Styrene	100	µg/L	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U
Isopropylbenzene	700	µg/L	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U
Phenol	2000	µg/L	10 U	10 U	10 U	5 U	5 UJ	5 U	5 U	5 U	5 UJ
2-Methylphenol	5	µg/L	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methylphenol	5	µg/L	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-Dimethylphenol	100	µg/L	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U
Naphthalene	300	µg/L	8 J	16	10 U	5 U	5 U	0.16 J	0 J	0.1 U	5 U
2-Methylnaphthalene	100	µg/L	10 U	10 U	10 U	5 U	5 U	5 U	0.1 U	0.1 U	5 U
1,1'Biphenyl	400	µg/L	NA	NA	10 U	5 U	5 U	5 U	0.34 J	5 U	5 U
Acenaphthylene	100	µg/L	3 J	6 J	10 U	5 U	5 U	5 U	0.19 J	0.05 J	5 U
Acenaphthene	400	µg/L	32	71	6 J	7.6	6.2	5.2	1.5 J	3 J	5 U
Dibenzofuran	100	µg/L	14	35	10 U	5 U	5 U	0.68 J	5 U	5 U	5 U
Fluorene	300	µg/L	14	30	10 U	5 U	5 U	1.2 J	0.33 J	0.1 U	5 U
Phenanthrene	100	µg/L	4 J	17	10 U	5 U	5 U	5 U	0.02 J	0.1 U	5 U
Anthracene	2000	µg/L	0.8 J	2 J	10 U	5 U	5 U	5 U	0.017 J	0.1 U	5 U
Carbazole	5	µg/L	3 J	**53**	10 U	5 U	5 U	1 J	5 U	5 U	5 U
Fluoranthene	300	µg/L	1 J	2 J	10 U	5 U	5 U	0.3 J	0.1 U	0.1 U	5 U
Pyrene	200	µg/L	0.4 J	10 U	10 U	5 U	5 U	0.31 J	0.1 U	0.11 U	5 U
Benzo(a)anthracene	5	µg/L	10 U	10 U	10 U	5 U	5 U	5 U	0.1 U	0.1 U	5 U
Chrysene	5	µg/L	10 U	10 U	10 U	5 U	5 U	5 U	0.1 U	0.1 U	5 U
Benzo(b)fluoranthene	5	µg/L	10 U	10 U	10 U	5 U	5 U	5 U	0.1 U	0.1 U	5 U
Benzo(k)fluoranthene	5	µg/L	10 U	10 U	10 U	5 U	5 U	5 U	0.1 U	0.1 U	5 U
Benzo(a)pyrene	5	µg/L	10 U	10 U	10 U	5 U	5 U	5 U	0.1 U	0.1 U	5 U
Indeno(1,2,3-cd)pyrene	5	µg/L	10 U	10 U	10 U	5 U	5 U	5 U	0.1 U	0.1 U	5 U
Benzo(g,h,i)perylene	5	µg/L	10 U	10 U	10 U	5 U	5 U	5 U	0.1 U	0.1 U	5 U

Notes:
Results in bold and yellow shade exceeded site-specific criteria.
J: Estimated value NA: Not analyzed
U: Non-detect R: Rejected
µg/L: Microgram per liter
UJ: Non-detect, the reporting limit is estimated

Table 3-4
Creosote-Related Contaminant Concentration Trend
Year 7 Groundwater Sampling
Federal Creosote Superfund Site
Manville, New Jersey

Chemical Name	Site-Specific Screening Criteria	Sample Code	MW-114I								
		Sample Date// Unit	7/23/1999	11/9/1999	11/9/2005	10/19/2006	11/12/2007	11/18/2008	10/20/2009	10/11/2010	10/17/2011
Benzene	1	µg/L	1 U	1 U	0.84	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	600	µg/L	1 U	0.5 J	1.4	0.5 U	0.52	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	700	µg/L	1 U	1	6.3	1.4	2.3	1.2	0.83	1.5	0.5 U
Xylenes (total)	1000	µg/L	1 U	3	7.4	0.5 U	2.82	0.5 U	1 U	1.44	1 U
Styrene	100	µg/L	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U
Isopropylbenzene	700	µg/L	NA	NA	1.3	0.56	0.96	0.7	1 U	0.8	0.21 J
Phenol	2000	µg/L	0.2 J	10 U	10 U	5 U	5 U	5 U	5 U	5 U	5.1 UJ
2-Methylphenol	5	µg/L	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5 U	5.1 U
4-Methylphenol	5	µg/L	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5 U	5.1 U
2,4-Dimethylphenol	100	µg/L	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5 U	5.1 U
Naphthalene	300	µg/L	0 J	63	**310**	9	52	2.3 J	1 J	89	5.1 U
2-Methylnaphthalene	100	µg/L	10 U	10 U	42	5 U	5 U	5 U	0.1 U	1 U	5.1 U
1,1'Biphenyl	400	µg/L	NA	NA	12	1.5 J	5.2	2.4 J	1.6 J	2.6 J	5.1 U
Acenaphthylene	100	µg/L	0.3 J	1 J	10 U	5 U	5 U	0.4 J	0.38 J	0.39 J	5.1 U
Acenaphthene	400	µg/L	10	36	48	31	34	43	39	40	15
Dibenzofuran	100	µg/L	3 J	31	35	12	19	13	9.2	7.2	5.1 U
Fluorene	300	µg/L	3 J	20	28	16	24	25	33	27	8.8
Phenanthrene	100	µg/L	10 U	18	12	1.4 J	3.8 J	1.8 J	0.86 J	2.4 J	5.1 U
Anthracene	2000	µg/L	0.4 J	2 J	1 J	5 U	5 U	0.91 J	0.81 J	0.72 J	5.1 U
Carbazole	5	µg/L	10 U	**39**	**50**	**19**	**24**	**22**	**17**	**23**	5.1 U
Fluoranthene	300	µg/L	4 J	5 J	6 J	5 J	5.2	5	5.6 J	4.2 J	3.8 J
Pyrene	200	µg/L	2 J	3 J	4 J	3.4 J	3.4 J	4.1 J	4.3 J	3.1 J	3.3 J
Benzo(a)anthracene	5	µg/L	10 U	10 U	10 U	5 U	5 U	0.17 J	0.16 J	1 U	5.1 U
Chrysene	5	µg/L	10 U	10 U	10 U	5 U	5 U	0.049 J	0.051 J	1 U	5.1 U
Benzo(b)fluoranthene	5	µg/L	10 U	10 U	10 U	5 U	5 U	5 U	0.1 U	1 U	5.1 U
Benzo(k)fluoranthene	5	µg/L	10 U	10 U	10 U	5 U	5 U	5 U	0.1 U	1 U	5.1 U
Benzo(a)pyrene	5	µg/L	10 U	10 U	10 U	5 U	5 U	5 U	0.1 U	1 U	5.1 U
Indeno(1,2,3-cd)pyrene	5	µg/L	10 U	10 U	10 U	5 U	5 U	5 U	0.1 U	1 U	5.1 U
Benzo(g,h,i)perylene	5	µg/L	10 U	10 U	10 U	5 U	5 U	5 U	0.1 U	1 U	5.1 U

Notes:
Results in bold and yellow shade exceeded site-specific criteria.
J: Estimated value NA: Not analyzed
U: Non-detect R: Rejected
µg/L: Microgram per liter
UJ: Non-detect, the reporting limit is estimated

Table 3-4
Creosote-Related Contaminant Concentration Trend
Year 7 Groundwater Sampling
Federal Creosote Superfund Site
Manville, New Jersey

Chemical Name	Site-Specific Screening Criteria	Sample Code	MW-116I								
		Sample Date// Unit	7/29/1999	11/11/1999	11/3/2005	10/24/2006	11/9/2007	11/25/2008	10/26/2009	10/15/2010	10/18/2011
Benzene	1	µg/L	5 U	20 U	0.35 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	600	µg/L	5 U	20 U	0.17 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	700	µg/L	40	44	3.7	3.9	2.6	0.73	1.2	0.63	8
Xylenes (total)	1000	µg/L	76	73	3.6	3.7	3.1	0.9	1.7 U	1.5 U	11.6
Styrene	100	µg/L	5 U	20 U	0.11 J	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U
Isopropylbenzene	700	µg/L	NA	NA	2.1	1.7	1.5	0.75	1 U	0.82	3.4
Phenol	2000	µg/L	1,000 U	10 U	10 U	5 U	4.7 UJ	5 U	5 U	5 U	5 UJ
2-Methylphenol	5	µg/L	1,000 U	10 U	10 U	5 U	4.7 U	5 U	5 U	5 U	5 U
4-Methylphenol	5	µg/L	1,000 U	10 U	10 U	5 U	4.7 U	5 U	5 U	5 U	5 U
2,4-Dimethylphenol	100	µg/L	1,000 U	10 U	10 U	5 U	4.7 U	5 U	5 U	5 U	5 U
Naphthalene	300	µg/L	**3,800**	**3,100**	30	70	73	23	19 J	23	**350**
2-Methylnaphthalene	100	µg/L	**440 J**	**190 J**	58	5 U	4.7 U	5 U	0.21 J	1 U	2.6 J
1,1'Biphenyl	400	µg/L	NA	NA	47	50	44	35	34	29	26
Acenaphthylene	100	µg/L	15 J	3 J	10 U	5 U	4.7 U	0.87 J	0.69 J	0.76 J	5 U
Acenaphthene	400	µg/L	**430 J**	230 J	77	71	56	42	39	39	44
Dibenzofuran	100	µg/L	**380 J**	**190 J**	**140**	**140**	**110**	77	92	93	79
Fluorene	300	µg/L	**340 J**	150 J	57	49	37	28	26	26	27
Phenanthrene	100	µg/L	**300 J**	**180 J**	**120**	94	67	56	49	59	44
Anthracene	2000	µg/L	23 J	20	12	11	11	10	6.6	6.6	5.2
Carbazole	5	µg/L	**290 J**	**170 J**	**52**	**53**	**46**	**40**	**28**	**37**	**44**
Fluoranthene	300	µg/L	33 J	27	36	30	32	30	25	35	24
Pyrene	200	µg/L	22 J	17	22	16	19	15	15	26	14
Benzo(a)anthracene	5	µg/L	1,000 U	2 J	2 J	1.3 J	1.6 J	1.4 J	1.2	3 J	5 U
Chrysene	5	µg/L	1,000 U	1 J	1 J	5 U	4.7 U	0.61 J	0.43	1.9 J	5 U
Benzo(b)fluoranthene	5	µg/L	1,000 U	10 U	10 U	5 U	4.7 U	0.31 J	0.22 J	1.4 J	5 U
Benzo(k)fluoranthene	5	µg/L	1,000 U	10 U	10 U	5 U	4.7 U	0.24 J	0.071 J	0.5 J	5 U
Benzo(a)pyrene	5	µg/L	1,000 U	10 U	10 U	5 U	4.7 U	0.27 J	0.16	0.92 J	5 U
Indeno(1,2,3-cd)pyrene	5	µg/L	1,000 U	10 U	10 U	5 U	4.7 U	5 UJ	0.1 U	0.41 J	5 U
Benzo(g,h,i)perylene	5	µg/L	1,000 U	10 U	10 U	5 U	4.7 U	0.45 J	0.1 U	0.27 J	5 U

Notes:
Results in bold and yellow shade exceeded site-specific criteria.
J: Estimated value NA: Not analyzed
U: Non-detect R: Rejected
µg/L: Microgram per liter
UJ: Non-detect, the reporting limit is estimated

Table 3-5
Groundwater Field Parameters
Year 7 Groundwater Sampling
Federal Creosote Superfund Site
Manville, New Jersey

Sample Well	Sampling Date	Final Depth to Water (ft. btic)	Flow Rate (mL/min.)	Total Volume Purged (gal.)	pH	Specific Conductivity (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)	Temp (°C)
MW-1RS	10/24/2011	19.43	250	5.3	6.57	0.411	31.7	4.16	71.9	19.61
MW-2RS	10/21/2011	16.07	280	2.0	6.36	0.996	2.89	0.12	-91.7	14.91
MW-6S	10/25/2011	9.15	250	2.3	6.23	0.378	4.48	0.31	-110.3	17.25
MW-7S	10/25/2011	9.51	200	1.3	6.2	0.387	2.19	0.35	-91.1	16.71
MW-12RS	10/24/2011	13.49	340	2.0	6.44	0.928	16.4	0.98	-36.6	19.44
MW-103S	10/24/2011	16.64	250	1.3	5.53	0.603	0.88	9.16	168.3	18.17
MW-104RS	10/24/2011	14.14	150	1.0	6.66	1.081	24.1	0.76	-47.9	16.16
MW-110S	10/20/2011	16.32	250	4.56	6.11	0.314	3.24	8.3	157.5	18.21
MW-111S	10/19/2011	20.14	250	2.3	6.32	1.132	31.8	0.36	-8.1	16.71
MW-114S	10/17/2011	10.4	320	2.0	6.42	0.621	0.68	6.75	158.8	15.63
MW-123S	10/20/2011	15.67	320	4.0	6.37	2.825	27.7	3.46	82.9	20.11
MW-124S	10/18/2011	15.62	200	2.0	5.99	5.932	74.2	1.73	106.1	21.69
MW-125S	10/18/2011	10.18	300	3.0	5.71	0.345	11.5	6.19	155.1	20.16
MW-126S	10/19/2011	7.75	360	2.9	5.6	0.392	20.5	6.53	280.1	19.72
MW-127S	10/25/2011	21.98	330	1.0	6.8	1.602	44.1	4.75	11.8	19.35
MW-2RI	10/21/2011	16.73	200	3.0	7.36	1.036	9.1	1.97	-106.2	15.66
MW-5I	10/25/2011	9.8	200	2.0	6.96	1.04	1.02	0.16	-37.3	14.89
MW-110I	10/20/2011	17.11	310	2.62	7.37	0.963	4.47	1.6	41.1	17.17
MW-111I	10/19/2011	20.71	300	2.0	7.15	0.583	6.49	1.55	53.4	15.48
MW-114I	10/17/2011	10.75	200	3.0	7.91	0.828	0.22	1.01	-46.7	14.86
MW-116I	10/18/2011	16.79	200	1.6	7.23	1.49	0.7	0.48	-170.4	15.45
MW-123I	10/20/2011	15.72	125	2.0	7.68	1.285	6.74	2.04	122.5	19.42
MW-124I	10/18/2011	14.88	250	4.6	6.8	1.18	10.23	2.12	194.3	18.82
MW-125I	10/18/2011	10.49	300	2.0	7.09	0.584	0.69	0.67	170.4	16.04
MW-2RD	10/21/2011	16.42	250	2.64	7.22	0.491	0.47	1.55	-134.4	15.47
MW-110D	10/20/2011	17.01	200	2.0	6.96	2.698	1	1.18	19.9	17.20
MW-111D	10/19/2011	20.57	300	2.4	9.2	0.821	4.43	4.39	100.6	16.84
MW-114D	10/17/2011	9.84	250	3.0	7.11	2.381	1.92	0.58	-14.5	16.37
MW-123D	10/20/2011	16.49	250	2.3	7.3	0.631	25	0.99	-29.1	18.12
MW-124D	10/18/2011	15.18	250	3.0	8.56	0.364	2.49	3.1	140	19.10

Notes:
ft - feet
btic - below top of inner casing
gal - gallon
mL/min - milliliter per minute
mS/cm - milliSiemen per centimeter
NTU - Nephelometric Turbidity Unit
mg/L - milligram per liter
mV - millivolt
°C - degrees Celsius
DO - dissolved oxygen
ORP - oxidation reduction potential
Temp - temperature

Table 3-6
Results for Natural Attenuation Parameters
Year 6 Groundwater Sampling
Federal Creosote Superfund Site
Manville, New Jersey

Sample Code	Sample Date	Nitrate/ Nitrite	Total Iron	Ferrous Iron	Total Manganese	Sulfate	Sulfide	Methane	Ethane	Ethene	Alkalinity, total (as $CaCO_3$)
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	mg/L
MW-1RS	10/24/2011	3.3	1.66	0.14	0.024	67	0.01 U	2 U	2 U	2 U	170
MW-2RS	10/21/2011	0.05 U	35.90	2.72	18.4	210	0.2	19	2 U	2 U	240
MW-2RS-DUP	10/21/2011	0.05 U	41.70	2.91	19.9	210	0.18	18	2 U	2 U	220
MW-6S	10/25/2011	0.05 U	33.10	2.26	5.52	9.2	0.01 U	22	2 U	2 U	120
MW-7S	10/25/2011	0.05 U	23.70	2.77	2.39	10	0.01 U	2.7	2 U	2 U	71
MW-12RS	10/24/2011	0.25	6.49	2.83	6.65	38	0.01 U	64	2 U	2 U	170
MW-103S	10/24/2011	2.6	0.16	0.03 U	0.015 U	40	0.01 U	2 U	2 U	2 U	24
MW-104RS	10/24/2011	1.6	13.40	2.43	0.58	30	0.01 U	2 U	2 U	2 U	120
MW-110S	10/20/2011	6.1	0.13	0.01 J	0.015 U	44	0.01 U	2 U	2 U	2 U	35
MW-111S	10/19/2011	0.05 U	5.99	3.4	13.7	5	0.01 U	290	2 U	2 U	140
MW-114S	10/17/2011	3.4	0.10	0.02 J	0.015 U	30	0.01 U	2 U	2 U	2 U	110
MW-123S	10/20/2011	4.4	3.26	0.83	0.24	50	0.01 U	2 U	2 U	2 U	90
MW-124S	10/18/2011	6	8.52	1.18	0.25	52	0.01 U	2 U	2 U	2 U	100
MW-125S	10/18/2011	3.2	1.10	0.31	0.03	29	0.01 U	2 U	2 U	2 U	45
MW-126S	10/19/2011	4.5	1.45	0.09	0.018	60	0.01 U	2 U	2 U	2 U	34
MW-127S	10/25/2011	4.4	4.15	0.69	0.135	30	0.01 U	2 U	2 U	2 U	47
MW-2RI	10/21/2011	0.05 U	0.89	0.25	3.32	1 U	0.067	11	2 U	2 U	160
MW-5I	10/25/2011	0.05 U	1.74	0.66	0.12	1.9	0.49	9.5	2 U	2 U	120
MW-110I	10/20/2011	0.05 U	0.27	0.12	0.875	8.5	0.016	91	2 U	2 U	210
MW-111I	10/19/2011	3.2	1.21	0.03	0.028	37	0.01 U	11	2 U	2 U	120
MW-114I	10/17/2011	0.05 U	0.10 U	0.03 U	1.79	9.4	0.01 U	23	2 U	2 U	210
MW-116I	10/18/2011	0.11	0.13	0.08	7.08	15	0.01 U	13	2 U	2 U	140
MW-123I	10/20/2011	5.1	0.52	0.05	0.52	25	0.01 U	2.9	2 U	2 U	79
MW-124I	10/18/2011	4.6	0.98	0.03	0.048	29	0.01 U	2 U	2 U	2 U	62
MW-125I	10/18/2011	1.7	0.16	0.01 J	0.015 U	23	0.01 U	2 U	2 U	2 U	160
MW-2RD	10/21/2011	0.05 U	0.31	0.29	0.62	110	1.2 L	2.7 L	2 U	2 U	96
MW-110D	10/20/2011	0.05 U	0.42	0.31	0.47	1,000	0.01 U	2 U	2 U	2 U	80
MW-111D	10/19/2011	1.5	0.38	0.04	0.024	200	0.01 U	2 U	2 U	2 U	130
MW-114D	10/17/2011	0.05 U	0.59	4.3 R	0.36	1,100	0.01 U	2 U	2 U	2 U	73
MW-114D-DUP	10/17/2011	0.05 U	0.60	4.1 R	0.37	1,100	0.01 U	2 U	2 U	2 U	78
MW-123D	10/20/2011	4.4	2.03	0.14	0.052	61	0.01 U	2 U	2 U	2 U	110
MW-124D	10/18/2011	4.2	0.31	0.03 U	0.015 U	14	0.01 U	2 U	2 U	2 U	96

Notes:
mg/L: milligram per liter $CaCO_3$: calcium carbonate   U: non-detect   L: biased low
µg/L: microgram per liter   J: estimated   R: rejected

Table 3-7
Summary of Natural Attenuation Evaluation
Year 7 Groundwater Sampling
Federal Creosote Superfund Site
Manville, New Jersey

Aquifer	Well ID	Concentration Trend of Creosote-related Contaminants	pH	Dissolved Oxygen	Temperature	ORP	Nitrate/ Nitrite	Dissolved Manganese	Ferrous Iron	Sulfate	Methane	Alkalinity, total (as $CaCO_3$)
Overburden	MW-2RS	U	Y	Y	Y	Y	Y	Y	Y	U	N	Y
	MW-6S	U	Y	Y	Y	Y	Y	Y	Y	Y	N	N
	MW-7S	U	Y	Y	Y	Y	Y	Y	Y	Y	U	U
Intermediate Bedrock	MW-2RI	U	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
	MW-5I	U	Y	Y	Y	Y	Y	N	Y	Y	N	Y
Deep Bedrock	MW-2RD	U	Y	Y	Y	Y	Y	Y	N	U	N	N

Notes:
$CaCO_3$ - calcium carbonate
ORP - oxidation reduction potential
ID - identification
Y - Collected data indicated that subsurface conditions were conducive to natural attenuation, or there was evidence of natural attenuation.
U - Collected data did not indicate or were inconclusive that subsurface conditions were conducive to natural attenuation, or there was evidence of natural attenuation.
N/A - Not available; no field parameters were collected from MW-6S and MW-7S due to the presence of free phase creosote.
N - the evidence are not sufficien to make a determination.

Figures

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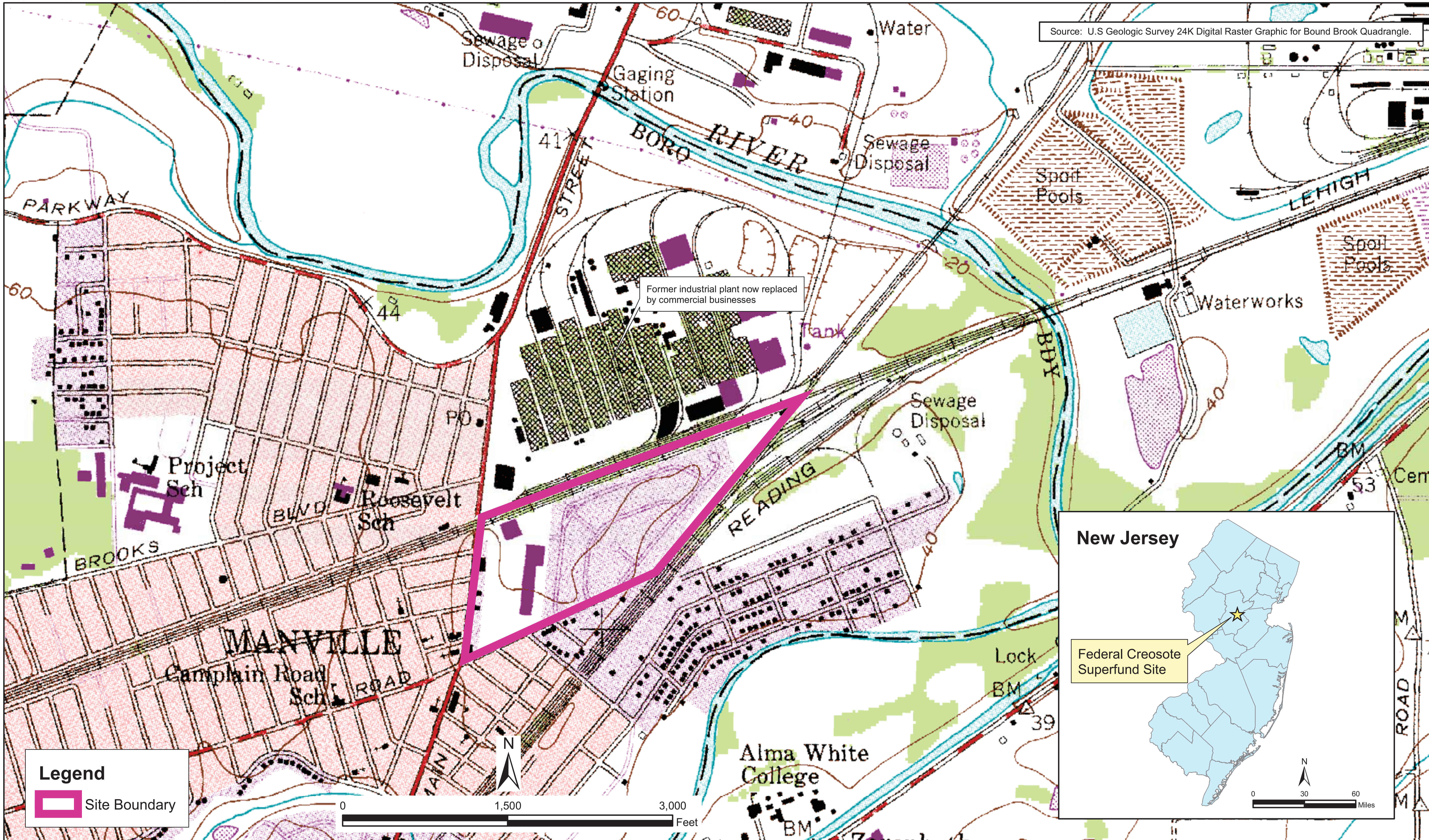

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Federal Creosote Superfund Site
Manville, New Jersey

Figure 1-1
Site Location Map

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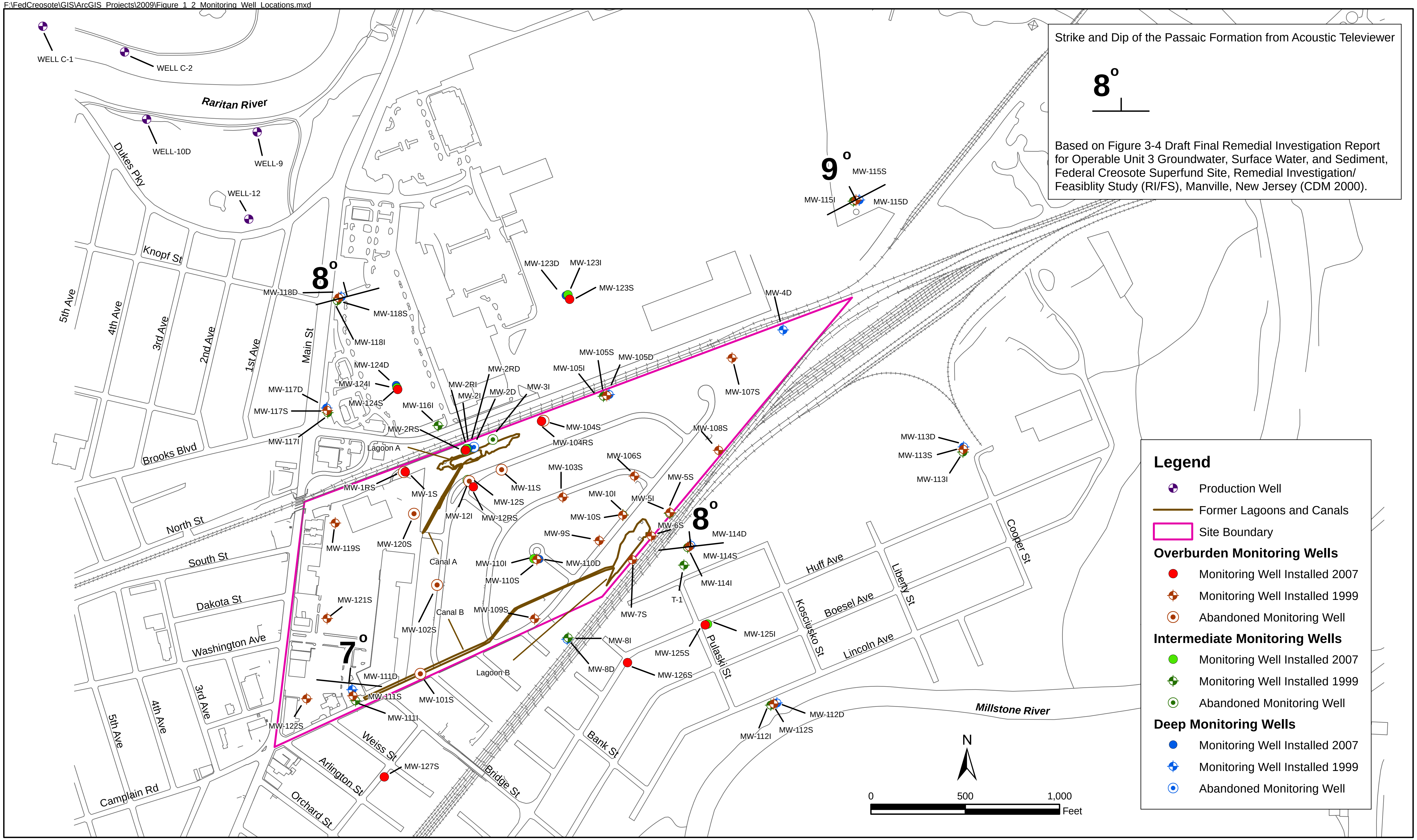

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Federal Creosote Superfund Site
Manville, New Jersey

Figure 1-2
Monitoring Well Locations

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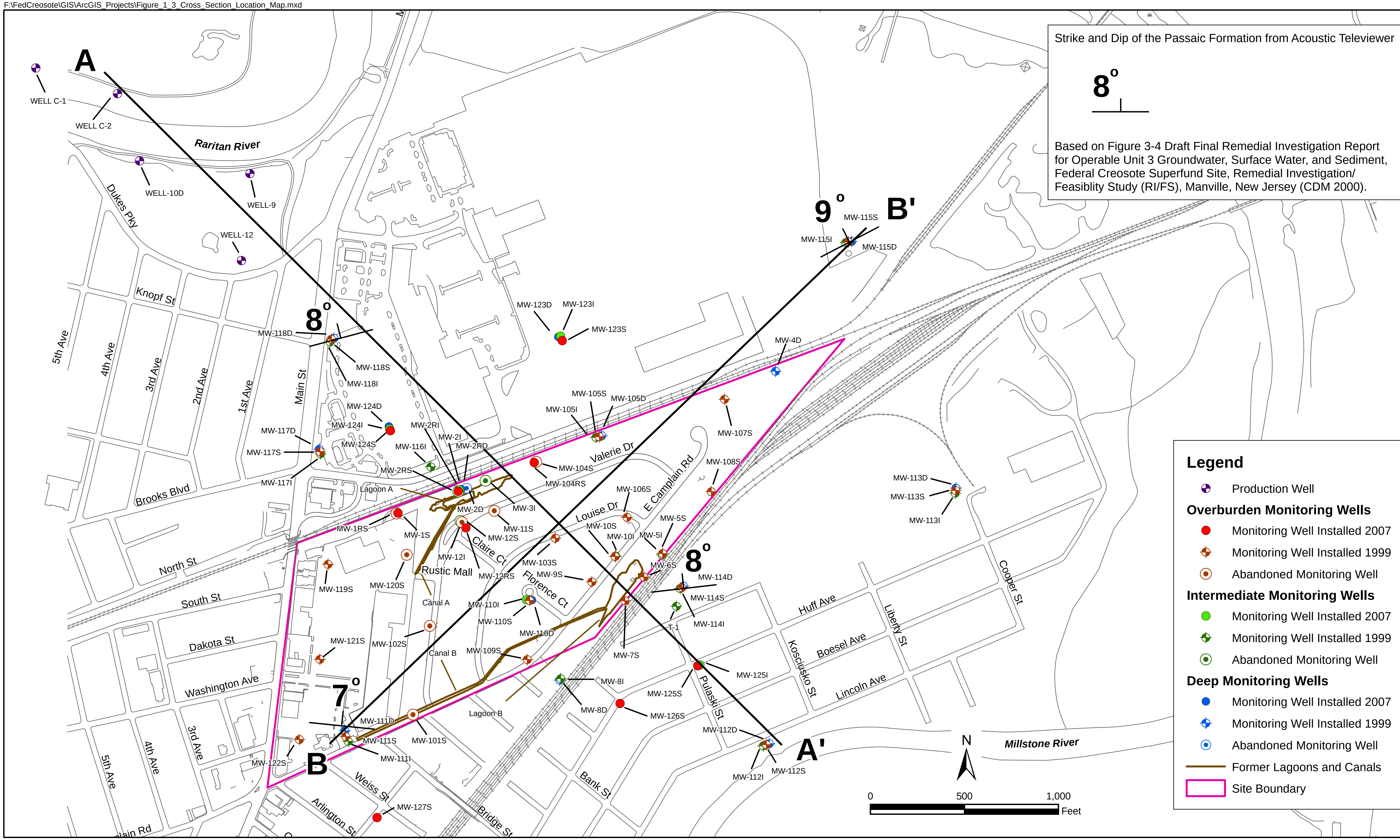

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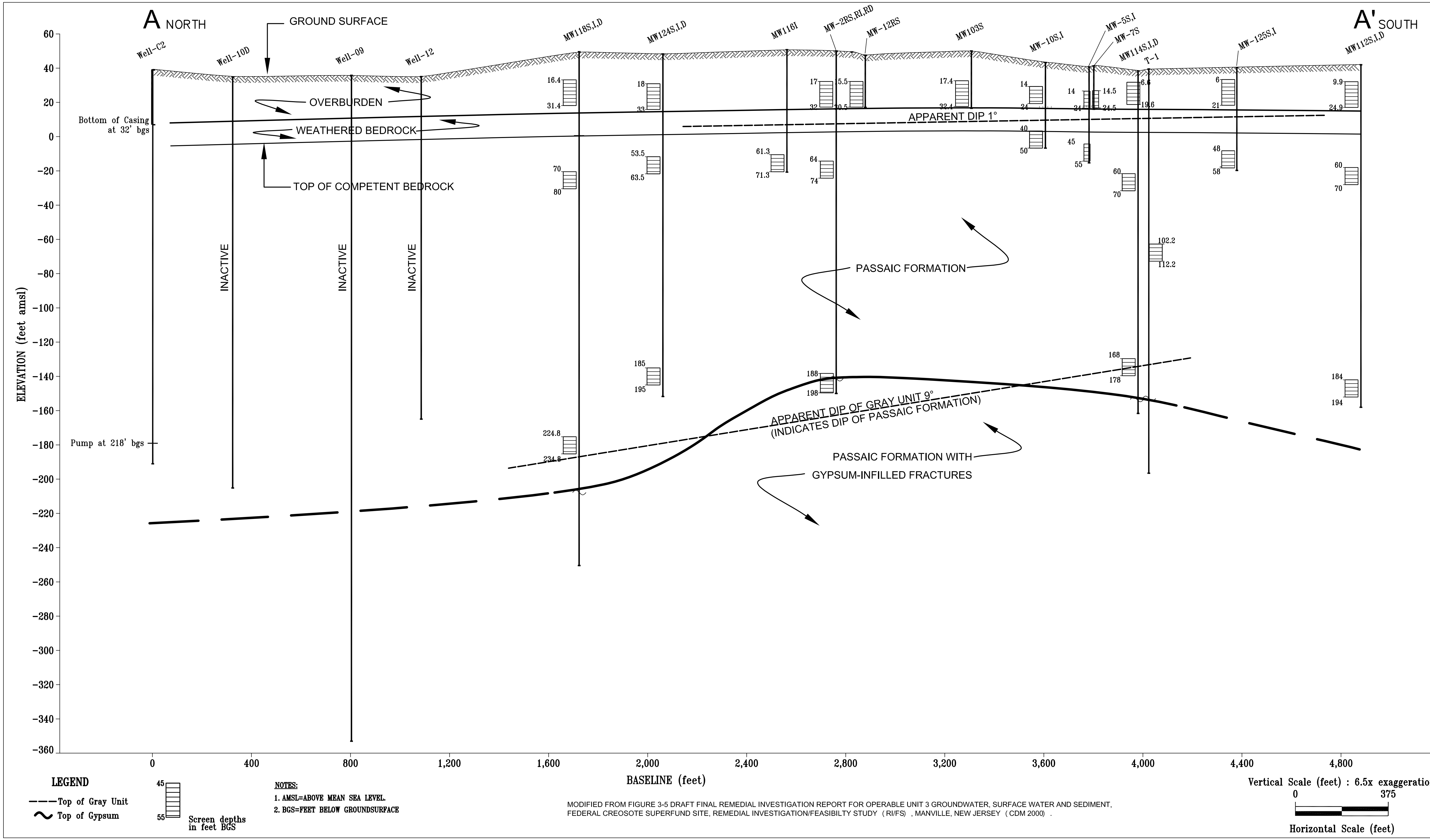
Federal Creosote Superfund Site
Manville, New Jersey

Figure 1-3
Cross-Section Location Map



MODIFIED FROM FIGURE 3-5 DRAFT FINAL REMEDIAL INVESTIGATION REPORT FOR OPERABLE UNIT 3 GROUNDWATER, SURFACE WATER AND SEDIMENT, FEDERAL CREOSOTE SUPERFUND SITE, REMEDIAL INVESTIGATION/FEASIBILTY STUDY (RI/FS), MANVILLE, NEW JERSEY (CDM 2000).

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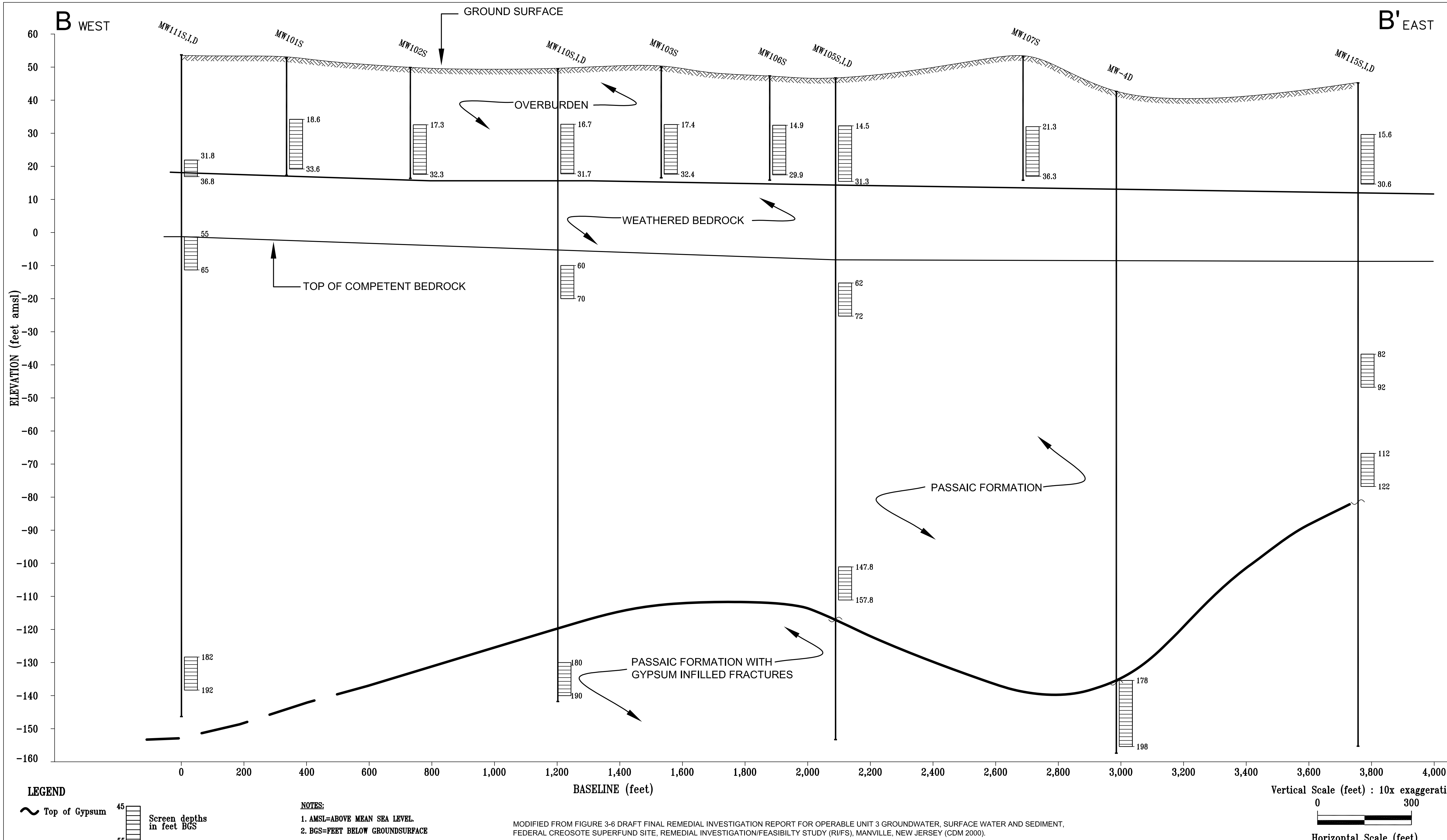
Federal Creosote Superfund Site
Manville, New Jersey

Figure 1-4
Cross Section A-A'



Federal Creosote Superfund Site
Manville, New Jersey

Figure 1-5
Cross Section B-B'

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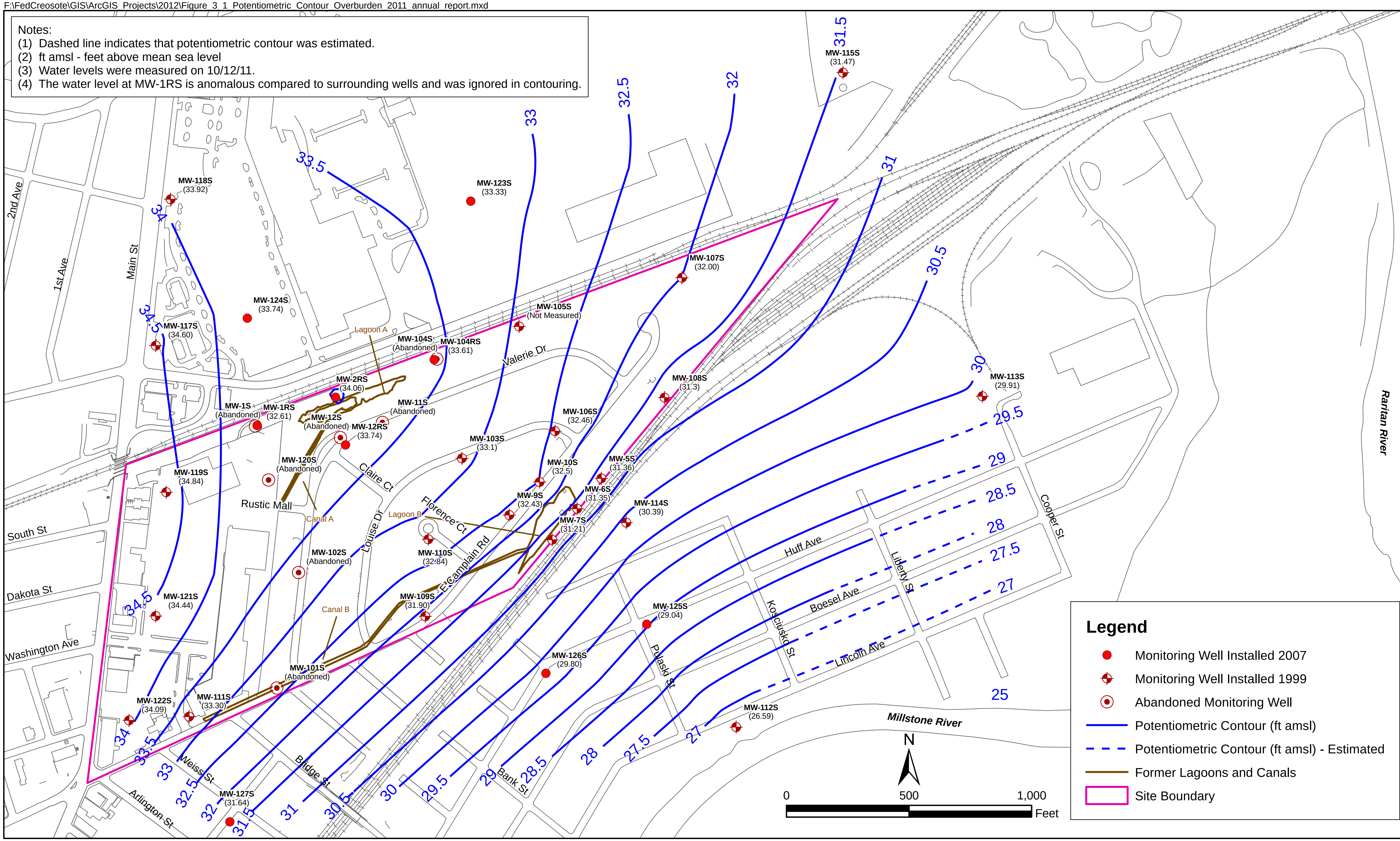

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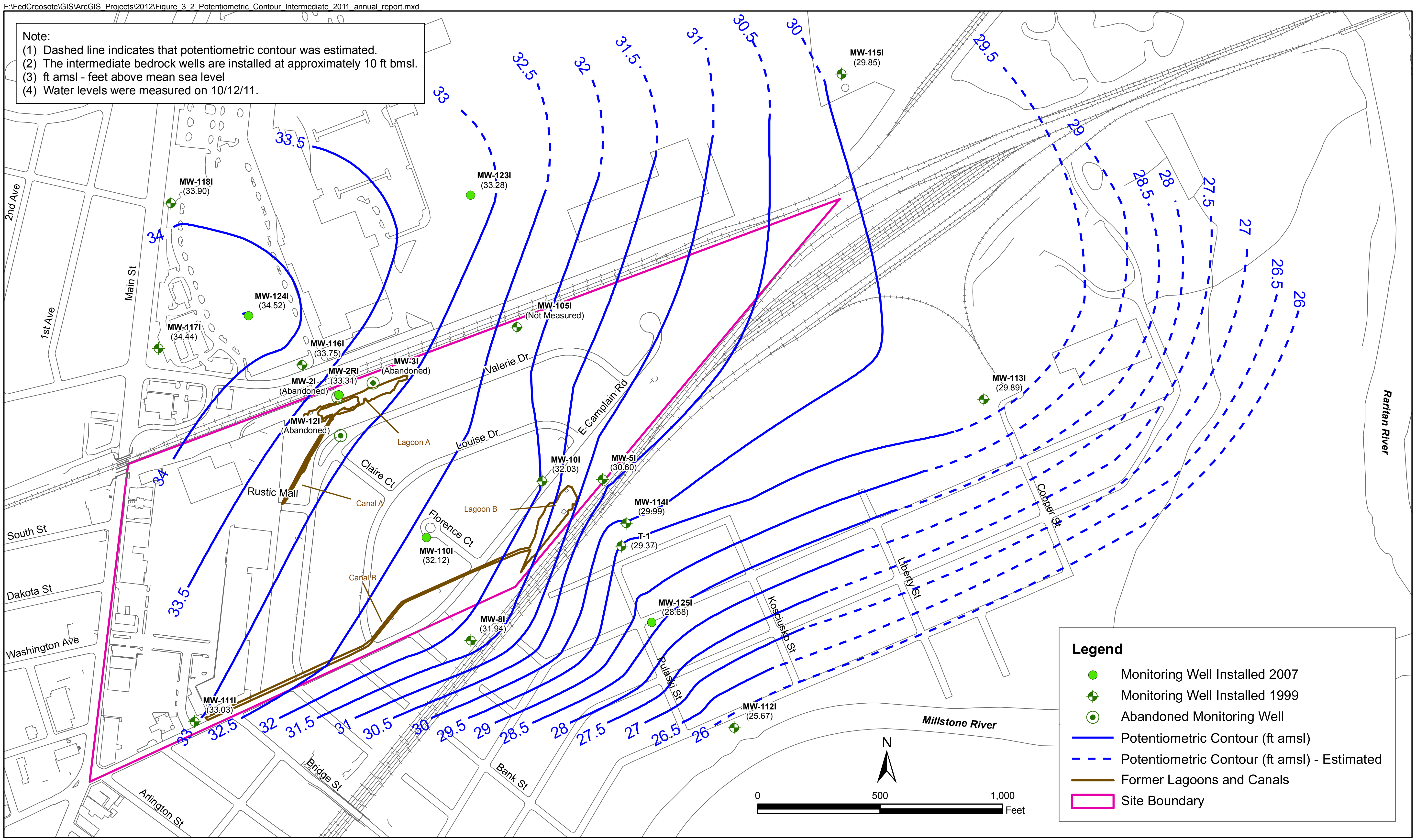
Federal Creosote Superfund Site
Manville, New Jersey

Figure 3-1
Potentiometric Contour Map
Overburden - October 2011



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Federal Creosote Superfund Site
Manville, New Jersey

Figure 3-2
Potentiometric Contour Map
Intermediate Bedrock - October 2011

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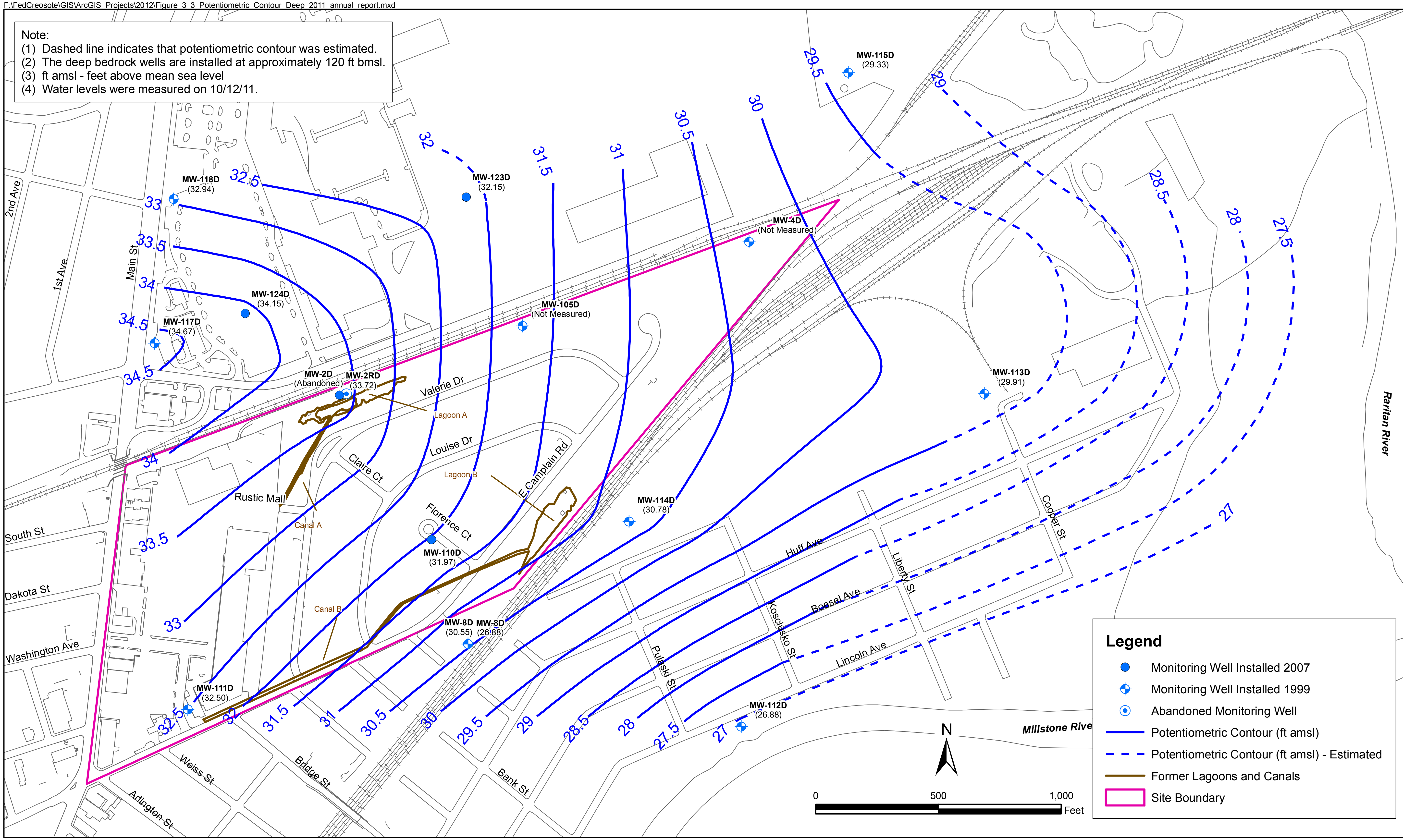

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Federal Creosote Superfund Site
Manville, New Jersey

Figure 3-3
Potentiometric Contour Map
Deep Bedrock - October 2011

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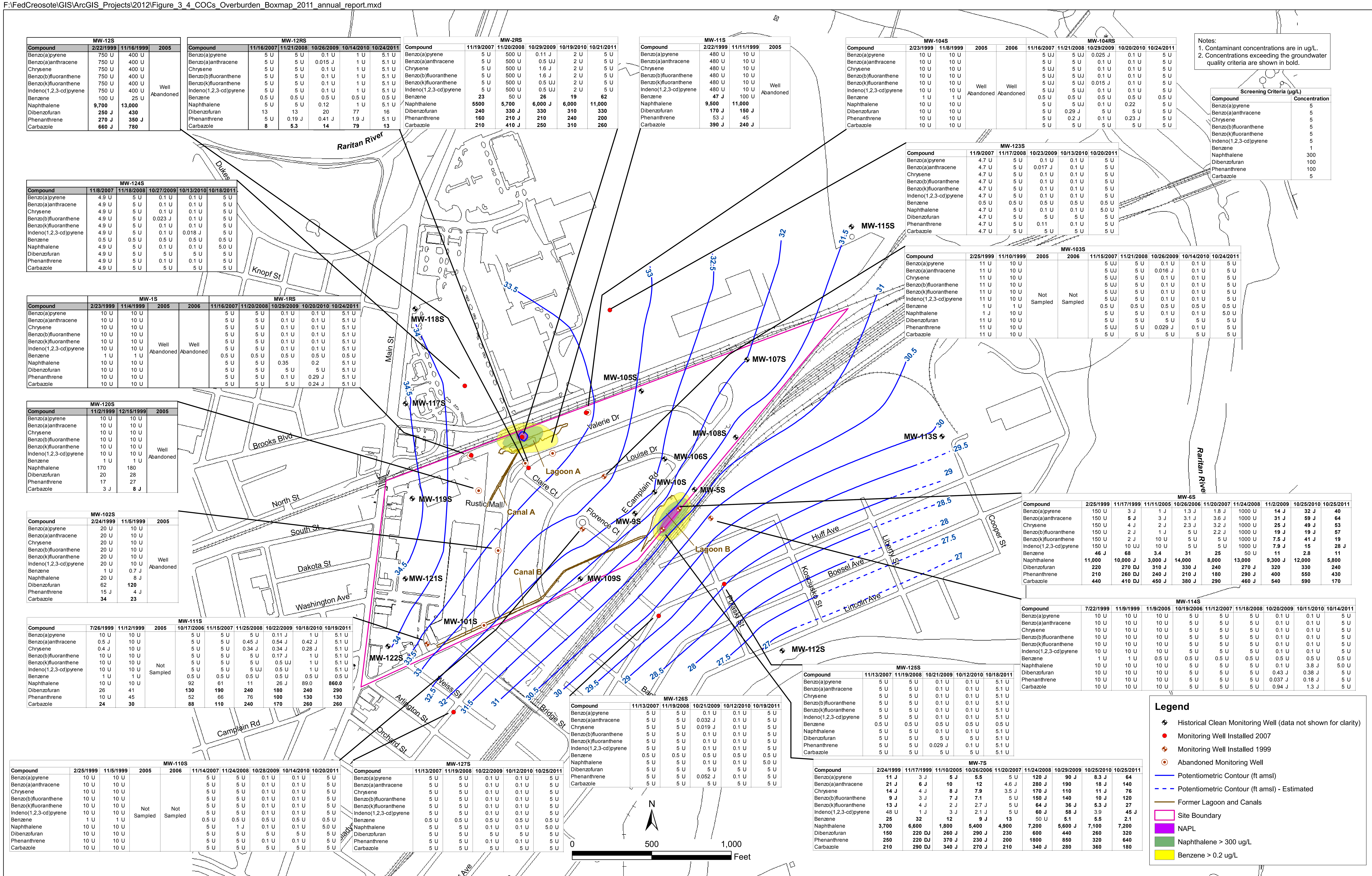

MW-12S

Compound	2/22/1999	11/16/1999	2005
Benzo(a)pyrene	750 U	400 U	Well Abandoned
Benzo(a)anthracene	750 U	400 U	
Chrysene	750 U	400 U	
Benzo(b)fluoranthene	750 U	400 U	
Benzo(k)fluoranthene	750 U	400 U	
Indeno(1,2,3-cd)pyrene	750 U	400 U	
Benzene	100 U	25 U	
Naphthalene	**9,700**	**13,000**	
Dibenzofuran	**250 J**	**430**	
Phenanthrene	**270 J**	**350 J**	
Carbazole	**660 J**	**780**	

MW-12RS

Compound	11/16/2007	11/21/2008	10/26/2009	10/14/2010	10/24/2011
Benzo(a)pyrene	5 U	5 U	0.1 U	1 U	5.1 U
Benzo(a)anthracene	5 U	5 U	0.015 J	1 U	5.1 U
Chrysene	5 U	5 U	0.1 U	1 U	5.1 U
Benzo(b)fluoranthene	5 U	5 U	0.1 U	1 U	5.1 U
Benzo(k)fluoranthene	5 U	5 U	0.1 U	1 U	5.1 U
Indeno(1,2,3-cd)pyrene	5 U	5 U	0.1 U	1 U	5.1 U
Benzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Naphthalene	5 U	5 U	0.12	1 U	5.1 U
Dibenzofuran	13	13	20	77	16
Phenanthrene	5 U	0.19 J	0.41 J	1.9 J	5.1 U
Carbazole	**8**	**5.3**	**14**	**79**	**13**

MW-2RS

Compound	11/19/2007	11/20/2008	10/29/2009	10/19/2010	10/21/2011
Benzo(a)pyrene	5 U	500 U	0.11 J	2 U	5 U
Benzo(a)anthracene	5 U	500 U	0.5 UJ	2 U	5 U
Chrysene	5 U	500 U	1.6 J	2 U	5 U
Benzo(b)fluoranthene	5 U	500 U	1.6 J	2 U	5 U
Benzo(k)fluoranthene	5 U	500 U	0.5 UJ	2 U	5 U
Indeno(1,2,3-cd)pyrene	5 U	500 U	0.5 UJ	2 U	5 U
Benzene	**23**	50 U	**26**	**19**	**62**
Naphthalene	**5500**	**5,700**	**6,000 J**	**6,000**	**11,000**
Dibenzofuran	**240**	**330 J**	**330**	**310**	**330**
Phenanthrene	**160**	**210 J**	**210**	**240**	**200**
Carbazole	**210**	**410 J**	**250**	**310**	**260**

MW-11S

Compound	2/22/1999	11/11/1999	2005
Benzo(a)pyrene	480 U	10 U	Well Abandoned
Benzo(a)anthracene	480 U	10 U	
Chrysene	480 U	10 U	
Benzo(b)fluoranthene	480 U	10 U	
Benzo(k)fluoranthene	480 U	10 U	
Indeno(1,2,3-cd)pyrene	480 U	10 U	
Benzene	**47 J**	100 U	
Naphthalene	**9,500**	**11,000**	
Dibenzofuran	**170 J**	**150 J**	
Phenanthrene	53 J	45	
Carbazole	**390 J**	**240 J**	

MW-104S / MW-104RS

	MW-104S				MW-104RS				
Compound	2/23/1999	11/8/1999	2005	2006	11/16/2007	11/21/2008	10/29/2009	10/20/2010	10/24/2011
Benzo(a)pyrene	10 U	10 U	Well Abandoned	Well Abandoned	5 UJ	5 UJ	0.025 J	0.1 U	5 U
Benzo(a)anthracene	10 U	10 U			5 U	5 U	0.1 U	0.1 U	5 U
Chrysene	10 U	10 U			5 UJ	5 U	0.1 U	0.1 U	5 U
Benzo(b)fluoranthene	10 U	10 U			5 UJ	5 UJ	0.1 U	0.1 U	5 U
Benzo(k)fluoranthene	10 U	10 U			5 UJ	5 UJ	0.015 J	0.1 U	5 U
Indeno(1,2,3-cd)pyrene	10 U	10 U			5 UJ	5 UJ	0.1 U	0.1 U	5 U
Benzene	1 U	1 U			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Naphthalene	10 U	10 U			5 U	5 UJ	0.1 U	0.22	5 U
Dibenzofuran	10 U	10 U			5 U	0.29 J	5 U	5 U	5 U
Phenanthrene	10 U	10 U			5 U	0.2 J	0.1 U	0.23 J	5 U
Carbazole	10 U	10 U			5 U	5 U	5 U	5 U	5 U

Notes:
1. Contaminant concentrations are in ug/L.
2. Concentrations exceeding the groundwater quality criteria are shown in bold.

Screening Criteria (µg/L)

Compound	Concentration
Benzo(a)pyrene	5
Benzo(a)anthracene	5
Chrysene	5
Benzo(b)fluoranthene	5
Benzo(k)fluoranthene	5
Indeno(1,2,3-cd)pyrene	5
Benzene	1
Naphthalene	300
Dibenzofuran	100
Phenanthrene	100
Carbazole	5

MW-123S

Compound	11/9/2007	11/17/2008	10/23/2009	10/13/2010	10/20/2011
Benzo(a)pyrene	4.7 U	5 U	0.1 U	0.1 U	5 U
Benzo(a)anthracene	4.7 U	5 U	0.017 J	0.1 U	5 U
Chrysene	4.7 U	5 U	0.1 U	0.1 U	5 U
Benzo(b)fluoranthene	4.7 U	5 U	0.1 U	0.1 U	5 U
Benzo(k)fluoranthene	4.7 U	5 U	0.1 U	0.1 U	5 U
Indeno(1,2,3-cd)pyrene	4.7 U	5 U	0.1 U	0.1 U	5 U
Benzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Naphthalene	4.7 U	5 U	0.1 U	0.1 U	5.0 U
Dibenzofuran	4.7 U	5 U	5 U	5 U	5 U
Phenanthrene	4.7 U	5 U	0.11	0.1 U	5 U
Carbazole	4.7 U	5 U	5 U	5 U	5 U

MW-103S

Compound	2/25/1999	11/10/1999	2005	2006	11/15/2007	11/21/2008	10/26/2009	10/14/2010	10/24/2011
Benzo(a)pyrene	11 U	10 U	Not Sampled	Not Sampled	5 UJ	5 U	0.1 U	0.1 U	5 U
Benzo(a)anthracene	11 U	10 U			5 UJ	5 U	0.016 J	0.1 U	5 U
Chrysene	11 U	10 U			5 UJ	5 U	0.1 U	0.1 U	5 U
Benzo(b)fluoranthene	11 U	10 U			5 UJ	5 U	0.1 U	0.1 U	5 U
Benzo(k)fluoranthene	11 U	10 U			5 UJ	5 U	0.1 U	0.1 U	5 U
Indeno(1,2,3-cd)pyrene	11 U	10 U			5 UJ	5 U	0.1 U	0.1 U	5 U
Benzene	1 U	1 U			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Naphthalene	1 J	10 U			5 U	5 U	0.1 U	0.1 U	5.0 U
Dibenzofuran	11 U	10 U			5 U	5 U	5 U	5 U	5 U
Phenanthrene	11 U	10 U			5 UJ	5 U	0.029 J	0.1 U	5 U
Carbazole	11 U	10 U			5 U	5 U	5 U	5 U	5 U

MW-124S

Compound	11/8/2007	11/18/2008	10/27/2009	10/13/2010	10/18/2011
Benzo(a)pyrene	4.9 U	5 U	0.1 U	0.1 U	5 U
Benzo(a)anthracene	4.9 U	5 U	0.1 U	0.1 U	5 U
Chrysene	4.9 U	5 U	0.1 U	0.1 U	5 U
Benzo(b)fluoranthene	4.9 U	5 U	0.023 J	0.1 U	5 U
Benzo(k)fluoranthene	4.9 U	5 U	0.1 U	0.1 U	5 U
Indeno(1,2,3-cd)pyrene	4.9 U	5 U	0.1 U	0.018 J	5 U
Benzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Naphthalene	4.9 U	5 U	0.1 U	0.1 U	5.0 U
Dibenzofuran	4.9 U	5 U	5 U	5 U	5 U
Phenanthrene	4.9 U	5 U	0.1 U	0.1 U	5 U
Carbazole	4.9 U	5 U	5 U	5 U	5 U

MW-1S / MW-1RS

	MW-1S				MW-1RS				
Compound	2/23/1999	11/4/1999	2005	2006	11/16/2007	11/20/2008	10/29/2009	10/20/2010	10/24/2011
Benzo(a)pyrene	10 U	10 U	Well Abandoned	Well Abandoned	5 U	5 U	0.1 U	0.1 U	5.1 U
Benzo(a)anthracene	10 U	10 U			5 U	5 U	0.1 U	0.1 U	5.1 U
Chrysene	10 U	10 U			5 U	5 U	0.1 U	0.1 U	5.1 U
Benzo(b)fluoranthene	10 U	10 U			5 U	5 U	0.1 U	0.1 U	5.1 U
Benzo(k)fluoranthene	10 U	10 U			5 U	5 U	0.1 U	0.1 U	5.1 U
Indeno(1,2,3-cd)pyrene	10 U	10 U			5 U	5 U	0.1 U	0.1 U	5.1 U
Benzene	1 U	1 U			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Naphthalene	10 U	10 U			5 U	5 U	0.35	0.2	5.1 U
Dibenzofuran	10 U	10 U			5 U	5 U	5 U	5 U	5.1 U
Phenanthrene	10 U	10 U			5 U	5 U	0.1 U	0.29 J	5.1 U
Carbazole	10 U	10 U			5 U	5 U	5 U	0.24 J	5.1 U

MW-120S

Compound	11/2/1999	12/15/1999	2005
Benzo(a)pyrene	10 U	10 U	Well Abandoned
Benzo(a)anthracene	10 U	10 U	
Chrysene	10 U	10 U	
Benzo(b)fluoranthene	10 U	10 U	
Benzo(k)fluoranthene	10 U	10 U	
Indeno(1,2,3-cd)pyrene	10 U	10 U	
Benzene	1 U	1 U	
Naphthalene	170	180	
Dibenzofuran	20	28	
Phenanthrene	17	27	
Carbazole	3 J	**8 J**	

MW-102S

Compound	2/24/1999	11/5/1999	2005
Benzo(a)pyrene	20 U	10 U	Well Abandoned
Benzo(a)anthracene	20 U	10 U	
Chrysene	20 U	10 U	
Benzo(b)fluoranthene	20 U	10 U	
Benzo(k)fluoranthene	20 U	10 U	
Indeno(1,2,3-cd)pyrene	20 U	10 U	
Benzene	1 U	0.7 J	
Naphthalene	20 U	8 J	
Dibenzofuran	62	**120**	
Phenanthrene	15 J	4 J	
Carbazole	**34**	**23**	

MW-111S

Compound	7/26/1999	11/12/1999	2005	10/17/2006	11/15/2007	11/25/2008	10/22/2009	10/18/2010	10/19/2011
Benzo(a)pyrene	10 U	10 U	Not Sampled	5 U	5 U	5 U	0.11 J	1 U	5.1 U
Benzo(a)anthracene	0.5 J	10 U		5 U	5 U	0.45 J	0.54 J	0.42 J	5.1 U
Chrysene	0.4 J	10 U		5 U	5 U	0.34 J	0.34 J	0.28 J	5.1 U
Benzo(b)fluoranthene	10 U	10 U		5 U	5 U	5 U	0.17 J	1 U	5.1 U
Benzo(k)fluoranthene	10 U	10 U		5 U	5 U	5 U	0.5 UJ	1 U	5.1 U
Indeno(1,2,3-cd)pyrene	10 U	10 U		5 U	5 U	5 UJ	0.5 U	1 U	5.1 U
Benzene	1 U	1 U		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Naphthalene	10 U	10 U		92	61	11	26 J	89.0	**860.0**
Dibenzofuran	26	41		**130**	**190**	**240**	**180**	**240**	**290**
Phenanthrene	10 U	45		52	66	76	**100**	**130**	**130**
Carbazole	**24**	**30**		**88**	**110**	**240**	**170**	**260**	**260**

MW-6S

Compound	2/25/1999	11/17/1999	11/11/2005	10/26/2006	11/20/2007	11/24/2008	11/2/2009	10/25/2010	10/25/2011
Benzo(a)pyrene	150 U	3 J	1 J	1.3 J	1.8 J	1000 U	**14 J**	**32 J**	**40**
Benzo(a)anthracene	150 U	**5 J**	3 J	3.1 J	3.6 J	1000 U	**31 J**	**59 J**	**64**
Chrysene	150 U	4 J	2 J	2.3 J	3.2 J	1000 U	**25 J**	**49 J**	**53**
Benzo(b)fluoranthene	150 U	2 J	1 J	5 U	2.2 J	1000 U	**19 J**	**19 J**	**57**
Benzo(k)fluoranthene	150 U	2 J	10 U	5 U	5 U	1000 U	**7.5 J**	**41 J**	**19**
Indeno(1,2,3-cd)pyrene	150 U	10 UJ	10 U	5 U	5 U	1000 U	**7.9 J**	**15**	**28 J**
Benzene	**46 J**	**68**	**3.4**	**31**	**25**	50 U	**11**	**2.8**	**11**
Naphthalene	**11,000**	**10,000 J**	**3,000 J**	**14,000**	**8,000**	**13,000**	**9,300 J**	**12,000**	**5,800**
Dibenzofuran	**220**	**270 DJ**	**310 J**	**330 J**	**240**	**270 J**	**320**	**330**	**240**
Phenanthrene	**210**	**260 DJ**	**240 J**	**210 J**	**180**	**290 J**	**400**	**550**	**430**
Carbazole	**440**	**410 DJ**	**450 J**	**380 J**	**290**	**460 J**	**540**	**590**	**170**

MW-114S

Compound	7/22/1999	11/9/1999	11/9/2005	10/19/2006	11/12/2007	11/18/2008	10/20/2009	10/11/2010	10/14/2011
Benzo(a)pyrene	10 U	10 U	10 U	5 U	5 U	5 U	0.1 U	0.1 U	5 U
Benzo(a)anthracene	10 U	10 U	10 U	5 U	5 U	5 U	0.1 U	0.1 U	5 U
Chrysene	10 U	10 U	10 U	5 U	5 U	5 U	0.1 U	0.1 U	5 U
Benzo(b)fluoranthene	10 U	10 U	10 U	5 U	5 U	5 U	0.1 U	0.1 U	5 U
Benzo(k)fluoranthene	10 U	10 U	10 U	5 U	5 U	5 U	0.1 U	0.1 U	5 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	5 U	5 U	5 U	0.1 U	0.1 U	5 U
Benzene	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Naphthalene	10 U	10 U	10 U	5 U	5 U	5 U	0.1 U	3.8 J	5.0 U
Dibenzofuran	10 U	10 U	10 U	5 U	5 U	5 U	0.43 J	0.38 J	5 U
Phenanthrene	10 U	10 U	10 U	5 U	5 U	5 U	0.037 J	0.18 J	5 U
Carbazole	10 U	10 U	10 U	5 U	5 U	5 U	0.94 J	1.3 J	5 U

MW-125S

Compound	11/13/2007	11/19/2008	10/21/2009	10/12/2010	10/18/2011
Benzo(a)pyrene	5 U	5 U	0.1 U	0.1 U	5.1 U
Benzo(a)anthracene	5 U	5 U	0.1 U	0.1 U	5.1 U
Chrysene	5 U	5 U	0.1 U	0.1 U	5.1 U
Benzo(b)fluoranthene	5 U	5 U	0.1 U	0.1 U	5.1 U
Benzo(k)fluoranthene	5 U	5 U	0.1 U	0.1 U	5.1 U
Indeno(1,2,3-cd)pyrene	5 U	5 U	0.1 U	0.1 U	5.1 U
Benzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Naphthalene	5 U	5 U	0.1 U	0.1 U	5.1 U
Dibenzofuran	5 U	5 U	5 U	5 U	5.1 U
Phenanthrene	5 U	5 U	0.029 J	0.1 U	5.1 U
Carbazole	5 U	5 U	5 U	5 U	5.1 U

MW-126S

Compound	11/13/2007	11/19/2008	10/21/2009	10/12/2010	10/19/2011
Benzo(a)pyrene	5 U	5 U	0.1 U	0.1 U	5 U
Benzo(a)anthracene	5 U	5 U	0.032 J	0.1 U	5 U
Chrysene	5 U	5 U	0.019 J	0.1 U	5 U
Benzo(b)fluoranthene	5 U	5 U	0.1 U	0.1 U	5 U
Benzo(k)fluoranthene	5 U	5 U	0.1 U	0.1 U	5 U
Indeno(1,2,3-cd)pyrene	5 U	5 U	0.1 U	0.1 U	5 U
Benzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Naphthalene	5 U	5 U	0.1 U	0.1 U	5.0 U
Dibenzofuran	5 U	5 U	5 U	5 U	5 U
Phenanthrene	5 U	5 U	0.052 J	0.1 U	5 U
Carbazole	5 U	5 U	5 U	5 U	5 U

MW-110S

Compound	2/25/1999	11/5/1999	2005	2006	11/14/2007	11/24/2008	10/28/2009	10/14/2010	10/20/2011
Benzo(a)pyrene	10 U	10 U	Not Sampled	Not Sampled	5 U	5 U	0.1 U	0.1 U	5 U
Benzo(a)anthracene	10 U	10 U			5 U	5 U	0.1 U	0.1 U	5 U
Chrysene	10 U	10 U			5 U	5 U	0.1 U	0.1 U	5 U
Benzo(b)fluoranthene	10 U	10 U			5 U	5 U	0.1 U	0.1 U	5 U
Benzo(k)fluoranthene	10 U	10 U			5 U	5 U	0.1 U	0.1 U	5 U
Indeno(1,2,3-cd)pyrene	10 U	10 U			5 U	5 U	0.1 U	0.1 U	5 U
Benzene	1 U	1 U			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Naphthalene	10 U	10 U			5 U	1 J	0.1 U	0.1 U	5.0 U
Dibenzofuran	10 U	10 U			5 U	5 U	5 U	5 U	5 U
Phenanthrene	10 U	10 U			5 U	5 U	0.1 U	0.1 U	5 U
Carbazole	10 U	10 U			5 U	5 U	5 U	5 U	5 U

MW-127S

Compound	11/13/2007	11/19/2008	10/22/2009	10/12/2010	10/25/2011
Benzo(a)pyrene	5 U	5 U	0.1 U	0.1 U	5 U
Benzo(a)anthracene	5 U	5 U	0.1 U	0.1 U	5 U
Chrysene	5 U	5 U	0.1 U	0.1 U	5 U
Benzo(b)fluoranthene	5 U	5 U	0.1 U	0.1 U	5 U
Benzo(k)fluoranthene	5 U	5 U	0.1 U	0.1 U	5 U
Indeno(1,2,3-cd)pyrene	5 U	5 U	0.1 U	0.1 U	5 U
Benzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Naphthalene	5 U	5 U	0.1 U	0.1 U	5.0 U
Dibenzofuran	5 U	5 U	5 U	5 U	5 U
Phenanthrene	5 U	5 U	0.1 U	0.1 U	5 U
Carbazole	5 U	5 U	5 U	5 U	5 U

MW-7S

Compound	2/24/1999	11/17/1999	11/10/2005	10/26/2006	11/20/2007	11/24/2008	10/29/2009	10/25/2010	10/25/2011
Benzo(a)pyrene	**11 J**	3 J	**5 J**	**5.5**	5 U	**120 J**	**90 J**	**8.3 J**	**64**
Benzo(a)anthracene	**21 J**	**6 J**	**10**	**12**	4.6 J	**280 J**	**190**	**18 J**	**140**
Chrysene	**14 J**	4 J	**8 J**	**7.9**	3.5 J	**170 J**	**110**	**11 J**	**76**
Benzo(b)fluoranthene	**9 J**	3 J	**7 J**	**7.1**	5 U	**150 J**	**140**	**10 J**	**120**
Benzo(k)fluoranthene	**13 J**	4 J	2 J	2.7 J	5 U	**64 J**	**36 J**	**5.3 J**	**27**
Indeno(1,2,3-cd)pyrene	48 U	1 J	3 J	2.1 J	5 U	**60 J**	**58 J**	3.9	**45 J**
Benzene	**25**	**32**	**12**	**9 J**	**13**	50 U	**5.1**	**5.5**	**2.1**
Naphthalene	**3,700**	**6,600**	**1,800**	**5,400**	**4,900**	**7,200**	**5,600 J**	**7,100**	**7,200**
Dibenzofuran	**150**	**220 DJ**	**260 J**	**290 J**	**230**	**600**	**440**	**260**	**320**
Phenanthrene	**250**	**220 DJ**	**370 J**	**230 J**	**200**	**1800**	**850**	**320**	**640**
Carbazole	**210**	**290 DJ**	**340 J**	**270 J**	**210**	**340 J**	**280**	**360**	**180**

Legend

- Historical Clean Monitoring Well (data not shown for clarity)
- Monitoring Well Installed 2007
- Monitoring Well Installed 1999
- Abandoned Monitoring Well
- Potentiometric Contour (ft amsl)
- Potentiometric Contour (ft amsl) - Estimated
- Former Lagoon and Canals
- Site Boundary
- NAPL
- Naphthalene > 300 ug/L
- Benzene > 0.2 ug/L

CDM Smith

Federal Creosote Superfund Site
Manville, New Jersey

Figure 3-4
Contaminants of Concern Concentrations
Overburden

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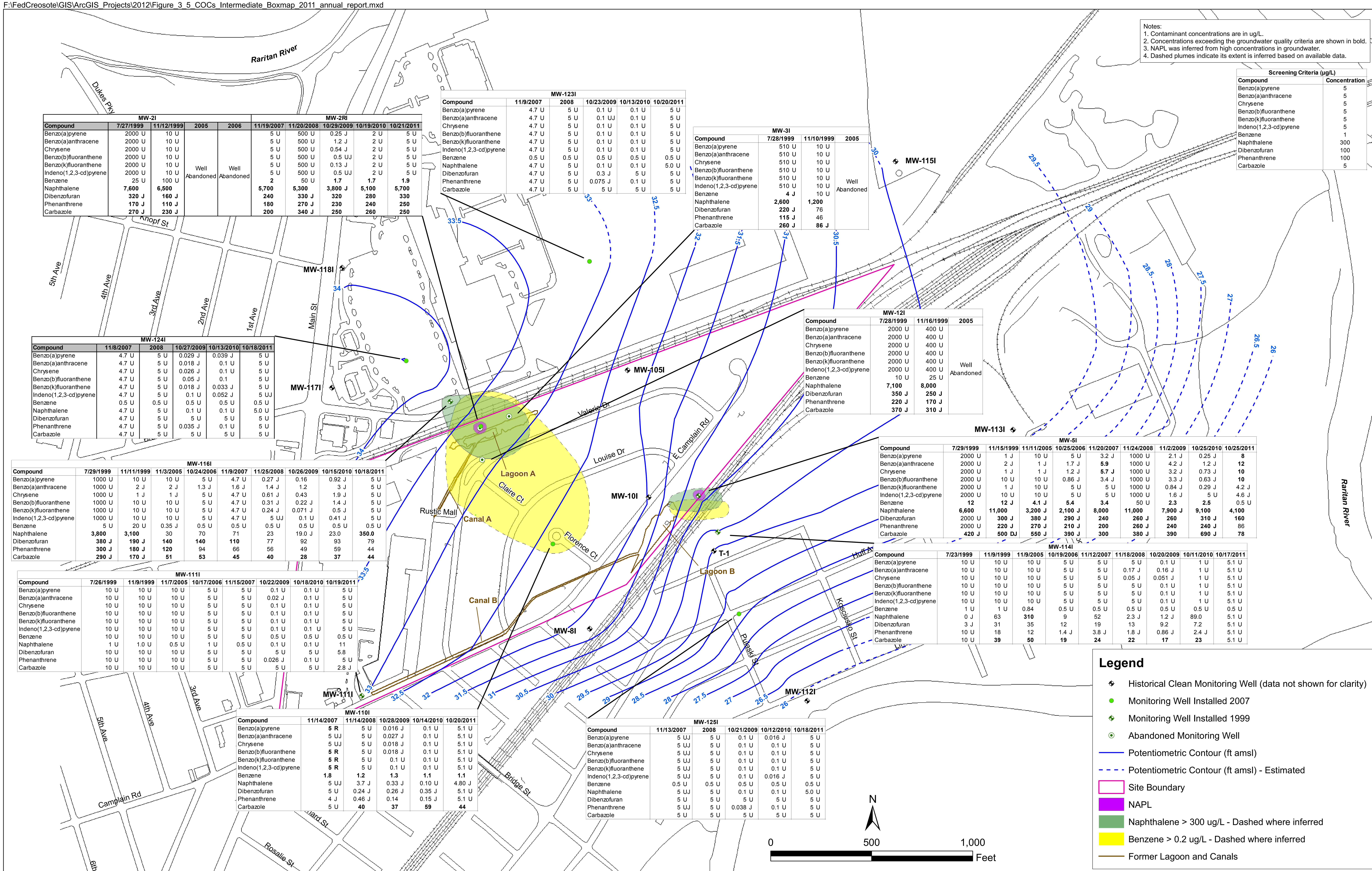


Notes:
1. Contaminant concentrations are in ug/L.
2. Concentrations exceeding the groundwater quality criteria are shown in bold.
3. NAPL was inferred from high concentrations in groundwater.
4. Dashed plumes indicate its extent is inferred based on available data.

Screening Criteria (µg/L)

Compound	Concentration
Benzo(a)pyrene	5
Benzo(a)anthracene	5
Chrysene	5
Benzo(b)fluoranthene	5
Benzo(k)fluoranthene	5
Indeno(1,2,3-cd)pyrene	5
Benzene	1
Naphthalene	300
Dibenzofuran	100
Phenanthrene	100
Carbazole	5

	MW-2I				MW-2RI				
Compound	7/27/1999	11/12/1999	2005	2006	11/19/2007	11/20/2008	10/29/2009	10/19/2010	10/21/2011
Benzo(a)pyrene	2000 U	10 U	Well Abandoned	Well Abandoned	5 U	500 U	0.25 J	2 U	5 U
Benzo(a)anthracene	2000 U	10 U			5 U	500 U	1.2 J	2 U	5 U
Chrysene	2000 U	10 U			5 U	500 U	0.54 J	2 U	5 U
Benzo(b)fluoranthene	2000 U	10 U			5 U	500 U	0.5 UJ	2 U	5 U
Benzo(k)fluoranthene	2000 U	10 U			5 U	500 U	0.13 J	2 U	5 U
Indeno(1,2,3-cd)pyrene	2000 U	10 U			5 U	500 U	0.5 UJ	2 U	5 U
Benzene	25 U	100 U			**2**	50 U	**1.7**	**1.7**	**1.9**
Naphthalene	**7,600**	**6,500**			**5,700**	**5,300**	**3,800 J**	**5,100**	**5,700**
Dibenzofuran	**320 J**	**160 J**			**240**	**330 J**	**320**	**280**	**330**
Phenanthrene	**170 J**	**110 J**			**180**	**270 J**	**230**	**240**	**250**
Carbazole	**270 J**	**230 J**			**200**	**340 J**	**250**	**260**	**250**

MW-123I					
Compound	11/9/2007	2008	10/23/2009	10/13/2010	10/20/2011
Benzo(a)pyrene	4.7 U	5 U	0.1 U	0.1 U	5 U
Benzo(a)anthracene	4.7 U	5 U	0.1 UJ	0.1 U	5 U
Chrysene	4.7 U	5 U	0.1 U	0.1 U	5 U
Benzo(b)fluoranthene	4.7 U	5 U	0.1 U	0.1 U	5 U
Benzo(k)fluoranthene	4.7 U	5 U	0.1 U	0.1 U	5 U
Indeno(1,2,3-cd)pyrene	4.7 U	5 U	0.1 U	0.1 U	5 U
Benzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Naphthalene	4.7 U	5 U	0.1 U	0.1 U	5.0 U
Dibenzofuran	4.7 U	5 U	0.3 J	5 U	5 U
Phenanthrene	4.7 U	5 U	0.075 J	0.1 U	5 U
Carbazole	4.7 U	5 U	5 U	5 U	5 U

MW-3I			
Compound	7/28/1999	11/10/1999	2005
Benzo(a)pyrene	510 U	10 U	Well Abandoned
Benzo(a)anthracene	510 U	10 U	
Chrysene	510 U	10 U	
Benzo(b)fluoranthene	510 U	10 U	
Benzo(k)fluoranthene	510 U	10 U	
Indeno(1,2,3-cd)pyrene	510 U	10 U	
Benzene	**4 J**	10 U	
Naphthalene	**2,600**	**1,200**	
Dibenzofuran	**220 J**	76	
Phenanthrene	**115 J**	46	
Carbazole	**260 J**	**86 J**	

MW-124I					
Compound	11/8/2007	2008	10/27/2009	10/13/2010	10/18/2011
Benzo(a)pyrene	4.7 U	5 U	0.029 J	0.039 J	5 U
Benzo(a)anthracene	4.7 U	5 U	0.018 J	0.1 U	5 U
Chrysene	4.7 U	5 U	0.026 J	0.1 U	5 U
Benzo(b)fluoranthene	4.7 U	5 U	0.05 J	0.1	5 U
Benzo(k)fluoranthene	4.7 U	5 U	0.018 J	0.033 J	5 U
Indeno(1,2,3-cd)pyrene	4.7 U	5 U	0.1 U	0.052 J	5 UJ
Benzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Naphthalene	4.7 U	5 U	0.1 U	0.1 U	5.0 U
Dibenzofuran	4.7 U	5 U	5 U	5 U	5 U
Phenanthrene	4.7 U	5 U	0.035 J	0.1 U	5 U
Carbazole	4.7 U	5 U	5 U	5 U	5 U

MW-12I			
Compound	7/28/1999	11/16/1999	2005
Benzo(a)pyrene	2000 U	400 U	Well Abandoned
Benzo(a)anthracene	2000 U	400 U	
Chrysene	2000 U	400 U	
Benzo(b)fluoranthene	2000 U	400 U	
Benzo(k)fluoranthene	2000 U	400 U	
Indeno(1,2,3-cd)pyrene	2000 U	400 U	
Benzene	10 U	25 U	
Naphthalene	**7,100**	**8,000**	
Dibenzofuran	**350 J**	**250 J**	
Phenanthrene	**220 J**	**170 J**	
Carbazole	**370 J**	**310 J**	

MW-116I									
Compound	7/29/1999	11/11/1999	11/3/2005	10/24/2006	11/9/2007	11/25/2008	10/26/2009	10/15/2010	10/18/2011
Benzo(a)pyrene	1000 U	10 U	10 U	5 U	4.7 U	0.27 J	0.16	0.92 J	5 U
Benzo(a)anthracene	1000 U	2 J	2 J	1.3 J	1.6 J	1.4 J	1.2	3 J	5 U
Chrysene	1000 U	1 J	1 J	5 U	4.7 U	0.61 J	0.43	1.9 J	5 U
Benzo(b)fluoranthene	1000 U	10 U	10 U	5 U	4.7 U	0.31 J	0.22 J	1.4 J	5 U
Benzo(k)fluoranthene	1000 U	10 U	10 U	5 U	4.7 U	0.24 J	0.071 J	0.5 J	5 U
Indeno(1,2,3-cd)pyrene	1000 U	10 U	10 U	5 U	4.7 U	5 UJ	0.1 U	0.41 J	5 U
Benzene	5 U	20 U	0.35 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Naphthalene	**3,800**	**3,100**	30	70	71	23	19.0 J	23.0	**350.0**
Dibenzofuran	**380 J**	**190 J**	**140**	**140**	**110**	77	92	93	79
Phenanthrene	**300 J**	**180 J**	**120**	94	66	56	49	59	44
Carbazole	**290 J**	**170 J**	**51**	**53**	**45**	**40**	**28**	**37**	**44**

MW-111I								
Compound	7/26/1999	11/9/1999	11/7/2005	10/17/2006	11/15/2007	10/22/2009	10/18/2010	10/19/2011
Benzo(a)pyrene	10 U	10 U	10 U	5 U	5 U	0.1 U	0.1 U	5 U
Benzo(a)anthracene	10 U	10 U	10 U	5 U	5 U	0.02 J	0.1 U	5 U
Chrysene	10 U	10 U	10 U	5 U	5 U	0.1 U	0.1 U	5 U
Benzo(b)fluoranthene	10 U	10 U	10 U	5 U	5 U	0.1 U	0.1 U	5 U
Benzo(k)fluoranthene	10 U	10 U	10 U	5 U	5 U	0.1 U	0.1 U	5 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	5 U	5 U	0.1 U	0.1 U	5 U
Benzene	10 U	10 U	10 U	5 U	5 U	0.5 U	0.5 U	0.5 U
Naphthalene	1 U	1.0 U	0.5 U	1 U	0.5 U	0.1 U	0.1 U	11
Dibenzofuran	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.8
Phenanthrene	10 U	10 U	10 U	5 U	5 U	0.026 J	0.1 U	5 U
Carbazole	10 U	10 U	10 U	5 U	5 U	5 U	5 U	2.8 J

MW-5I									
Compound	7/29/1999	11/15/1999	11/11/2005	10/25/2006	11/20/2007	11/24/2008	11/2/2009	10/25/2010	10/25/2011
Benzo(a)pyrene	2000 U	1 J	10 U	5 U	3.2 J	1000 U	2.1 J	0.25 J	**8**
Benzo(a)anthracene	2000 U	2 J	1 J	1.7 J	**5.9**	1000 U	4.2 J	1.2 J	**12**
Chrysene	2000 U	1 J	1 J	1.2 J	**5.7 J**	1000 U	3.2 J	0.73 J	**10**
Benzo(b)fluoranthene	2000 U	10 U	10 U	0.86 J	3.4 J	1000 U	3.3 J	0.63 J	**10**
Benzo(k)fluoranthene	2000 U	1 J	10 U	5 U	5 U	1000 U	0.84 J	0.29 J	4.2 J
Indeno(1,2,3-cd)pyrene	2000 U	10 U	10 U	5 U	5 U	1000 U	1.6 J	5 U	4.6 J
Benzene	**12**	**12 J**	**4.1 J**	**5.4**	**3.4**	50 U	**2.3**	**2.5**	0.5 U
Naphthalene	**6,600**	**11,000**	**3,200 J**	**2,100 J**	**8,000**	**11,000**	**7,900 J**	**9,100**	**4,100**
Dibenzofuran	2000 U	**300 J**	**380 J**	**290 J**	**240**	**260 J**	**260**	**310 J**	**160**
Phenanthrene	2000 U	**220 J**	**270 J**	**210 J**	**200**	**260 J**	**240**	**240 J**	86
Carbazole	**420 J**	**500 DJ**	**550 J**	**390 J**	**300**	**380 J**	**390**	**690 J**	**78**

MW-114I									
Compound	7/23/1999	11/9/1999	11/9/2005	10/19/2006	11/12/2007	11/18/2008	10/20/2009	10/11/2010	10/17/2011
Benzo(a)pyrene	10 U	10 U	10 U	5 U	5 U	5 U	0.1 U	1 U	5.1 U
Benzo(a)anthracene	10 U	10 U	10 U	5 U	5 U	0.17 J	0.16 J	1 U	5.1 U
Chrysene	10 U	10 U	10 U	5 U	5 U	0.05 J	0.051 J	1 U	5.1 U
Benzo(b)fluoranthene	10 U	10 U	10 U	5 U	5 U	5 U	0.1 U	1 U	5.1 U
Benzo(k)fluoranthene	10 U	10 U	10 U	5 U	5 U	5 U	0.1 U	1 U	5.1 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	5 U	5 U	5 U	0.1 U	1 U	5.1 U
Benzene	1 U	1 U	0.84	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Naphthalene	0 J	63	**310**	9	52	2.3 J	1.2 J	89.0	5.1 U
Dibenzofuran	3 J	31	35	12	19	13	9.2	7.2	5.1 U
Phenanthrene	10 U	18	12	1.4 J	3.8 J	1.8 J	0.86 J	2.4 J	5.1 U
Carbazole	10 U	**39**	**50**	**19**	**24**	**22**	**17**	**23**	5.1 U

MW-110I					
Compound	11/14/2007	11/14/2008	10/28/2009	10/14/2010	10/20/2011
Benzo(a)pyrene	**5 R**	5 U	0.016 J	0.1 U	5.1 U
Benzo(a)anthracene	5 UJ	5 U	0.027 J	0.1 U	5.1 U
Chrysene	5 UJ	5 U	0.018 J	0.1 U	5.1 U
Benzo(b)fluoranthene	**5 R**	5 U	0.018 J	0.1 U	5.1 U
Benzo(k)fluoranthene	**5 R**	5 U	0.1 U	0.1 U	5.1 U
Indeno(1,2,3-cd)pyrene	**5 R**	5 U	0.1 U	0.1 U	5.1 U
Benzene	**1.8**	**1.2**	**1.3**	**1.1**	**1.1**
Naphthalene	5 UJ	3.7 J	0.33 J	0.10 U	4.80 J
Dibenzofuran	5 U	0.24 J	0.26 J	0.35 J	5.1 U
Phenanthrene	4 J	0.46 J	0.14	0.15 J	5.1 U
Carbazole	5 U	**40**	**37**	**59**	**44**

MW-125I					
Compound	11/13/2007	2008	10/21/2009	10/12/2010	10/18/2011
Benzo(a)pyrene	5 UJ	5 U	0.1 U	0.016 J	5 U
Benzo(a)anthracene	5 UJ	5 U	0.1 U	0.1 U	5 U
Chrysene	5 UJ	5 U	0.1 U	0.1 U	5 U
Benzo(b)fluoranthene	5 UJ	5 U	0.1 U	0.1 U	5 U
Benzo(k)fluoranthene	5 UJ	5 U	0.1 U	0.1 U	5 U
Indeno(1,2,3-cd)pyrene	5 UJ	5 U	0.1 U	0.016 J	5 U
Benzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Naphthalene	5 UJ	5 U	0.1 U	0.1 U	5.0 U
Dibenzofuran	5 U	5 U	5 U	5 U	5 U
Phenanthrene	5 UJ	5 U	0.038 J	0.1 U	5 U
Carbazole	5 U	5 U	5 U	5 U	5 U

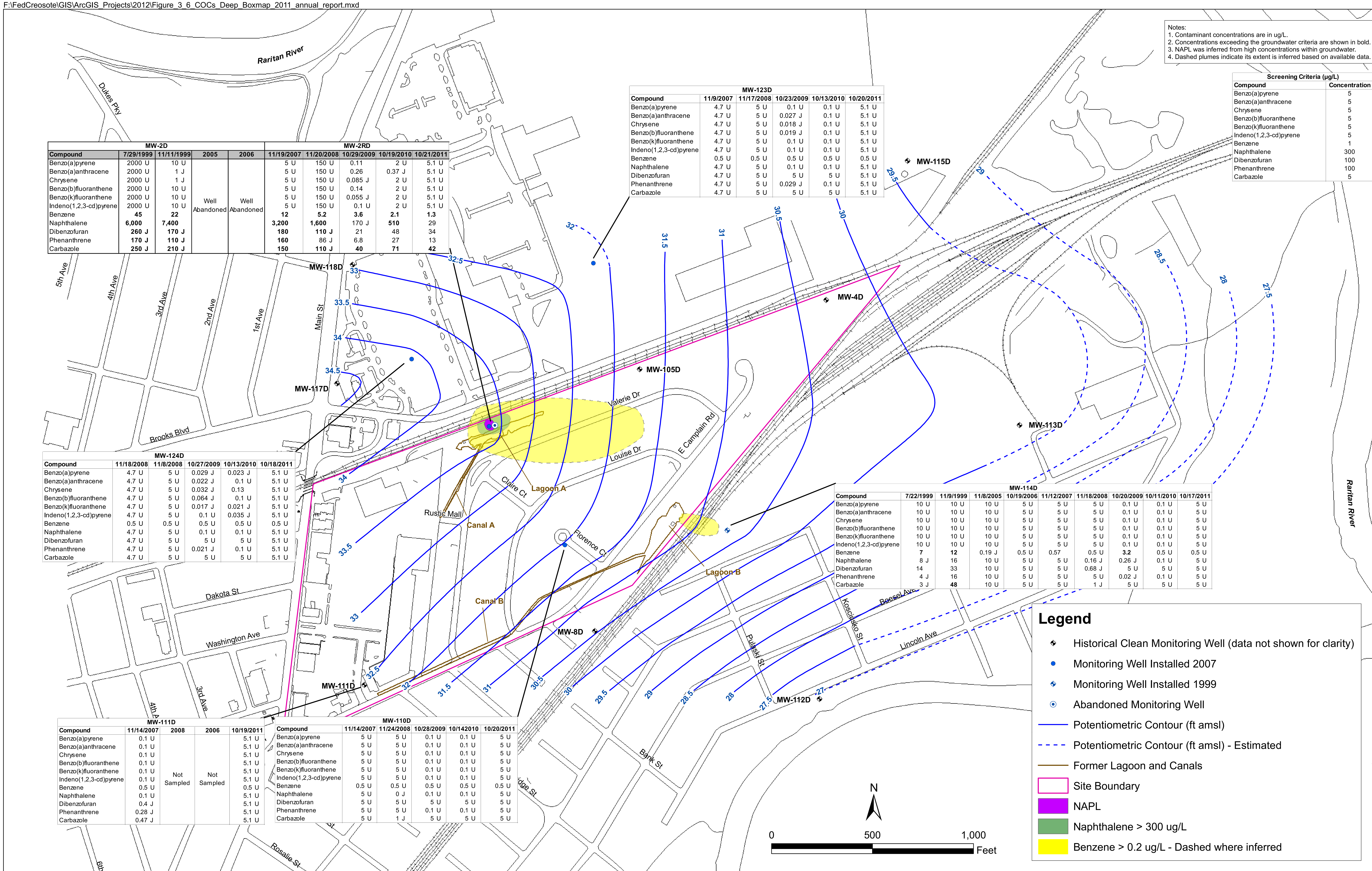
Legend

- Historical Clean Monitoring Well (data not shown for clarity)
- Monitoring Well Installed 2007
- Monitoring Well Installed 1999
- Abandoned Monitoring Well
- Potentiometric Contour (ft amsl)
- Potentiometric Contour (ft amsl) - Estimated
- Site Boundary
- NAPL
- Naphthalene > 300 ug/L - Dashed where inferred
- Benzene > 0.2 ug/L - Dashed where inferred
- Former Lagoon and Canals

Federal Creosote Superfund Site
Manville, New Jersey

Figure 3-5
Contaminants of Concern Concentrations
Intermediate Bedrock

F:\FedCreosote\GIS\ArcGIS_Projects\2012\Figure_3_6_COCs_Deep_Boxmap_2011_annual_report.mxd



Notes:
1. Contaminant concentrations are in ug/L.
2. Concentrations exceeding the groundwater criteria are shown in bold.
3. NAPL was inferred from high concentrations within groundwater.
4. Dashed plumes indicate its extent is inferred based on available data.

Screening Criteria (µg/L)	
Compound	Concentration
Benzo(a)pyrene	5
Benzo(a)anthracene	5
Chrysene	5
Benzo(b)fluoranthene	5
Benzo(k)fluoranthene	5
Indeno(1,2,3-cd)pyrene	5
Benzene	1
Naphthalene	300
Dibenzofuran	100
Phenanthrene	100
Carbazole	5

	MW-2D				MW-2RD				
Compound	7/29/1999	11/11/1999	2005	2006	11/19/2007	11/20/2008	10/29/2009	10/19/2010	10/21/2011
Benzo(a)pyrene	2000 U	10 U	Well Abandoned	Well Abandoned	5 U	150 U	0.11	2 U	5.1 U
Benzo(a)anthracene	2000 U	1 J			5 U	150 U	0.26	0.37 J	5.1 U
Chrysene	2000 U	1 J			5 U	150 U	0.085 J	2 U	5.1 U
Benzo(b)fluoranthene	2000 U	10 U			5 U	150 U	0.14	2 U	5.1 U
Benzo(k)fluoranthene	2000 U	10 U			5 U	150 U	0.055 J	2 U	5.1 U
Indeno(1,2,3-cd)pyrene	2000 U	10 U			5 U	150 U	0.1 U	2 U	5.1 U
Benzene	**45**	**22**			**12**	**5.2**	**3.6**	**2.1**	**1.3**
Naphthalene	**6,000**	**7,400**			**3,200**	**1,600**	170 J	**510**	29
Dibenzofuran	**260 J**	**170 J**			**180**	**110 J**	21	48	34
Phenanthrene	**170 J**	**110 J**			**160**	86 J	6.8	27	13
Carbazole	**250 J**	**210 J**			**150**	**110 J**	**40**	**71**	**42**

	MW-123D				
Compound	11/9/2007	11/17/2008	10/23/2009	10/13/2010	10/20/2011
Benzo(a)pyrene	4.7 U	5 U	0.1 U	0.1 U	5.1 U
Benzo(a)anthracene	4.7 U	5 U	0.027 J	0.1 U	5.1 U
Chrysene	4.7 U	5 U	0.018 J	0.1 U	5.1 U
Benzo(b)fluoranthene	4.7 U	5 U	0.019 J	0.1 U	5.1 U
Benzo(k)fluoranthene	4.7 U	5 U	0.1 U	0.1 U	5.1 U
Indeno(1,2,3-cd)pyrene	4.7 U	5 U	0.1 U	0.1 U	5.1 U
Benzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Naphthalene	4.7 U	5 U	0.1 U	0.1 U	5.1 U
Dibenzofuran	4.7 U	5 U	5 U	5 U	5.1 U
Phenanthrene	4.7 U	5 U	0.029 J	0.1 U	5.1 U
Carbazole	4.7 U	5 U	5 U	5 U	5.1 U

	MW-124D				
Compound	11/18/2008	11/8/2008	10/27/2009	10/13/2010	10/18/2011
Benzo(a)pyrene	4.7 U	5 U	0.029 J	0.023 J	5.1 U
Benzo(a)anthracene	4.7 U	5 U	0.022 J	0.1 U	5.1 U
Chrysene	4.7 U	5 U	0.032 J	0.13	5.1 U
Benzo(b)fluoranthene	4.7 U	5 U	0.064 J	0.1 U	5.1 U
Benzo(k)fluoranthene	4.7 U	5 U	0.017 J	0.021 J	5.1 U
Indeno(1,2,3-cd)pyrene	4.7 U	5 U	0.1 U	0.035 J	5.1 U
Benzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Naphthalene	4.7 U	5 U	0.1 U	0.1 U	5.1 U
Dibenzofuran	4.7 U	5 U	5 U	5 U	5.1 U
Phenanthrene	4.7 U	5 U	0.021 J	0.1 U	5.1 U
Carbazole	4.7 U	5 U	5 U	5 U	5.1 U

	MW-114D								
Compound	7/22/1999	11/9/1999	11/8/2005	10/19/2006	11/12/2007	11/18/2008	10/20/2009	10/11/2010	10/17/2011
Benzo(a)pyrene	10 U	10 U	10 U	5 U	5 U	5 U	0.1 U	0.1 U	5 U
Benzo(a)anthracene	10 U	10 U	10 U	5 U	5 U	5 U	0.1 U	0.1 U	5 U
Chrysene	10 U	10 U	10 U	5 U	5 U	5 U	0.1 U	0.1 U	5 U
Benzo(b)fluoranthene	10 U	10 U	10 U	5 U	5 U	5 U	0.1 U	0.1 U	5 U
Benzo(k)fluoranthene	10 U	10 U	10 U	5 U	5 U	5 U	0.1 U	0.1 U	5 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	5 U	5 U	5 U	0.1 U	0.1 U	5 U
Benzene	**7**	**12**	0.19 J	0.5 U	0.57	0.5 U	**3.2**	0.5 U	0.5 U
Naphthalene	8 J	16	10 U	5 U	5 U	0.16 J	0.26 J	0.1 U	5 U
Dibenzofuran	14	33	10 U	5 U	5 U	0.68 J	5 U	5 U	5 U
Phenanthrene	4 J	16	10 U	5 U	5 U	5 U	0.02 J	0.1 U	5 U
Carbazole	3 J	**48**	10 U	5 U	5 U	1 J	5 U	5 U	5 U

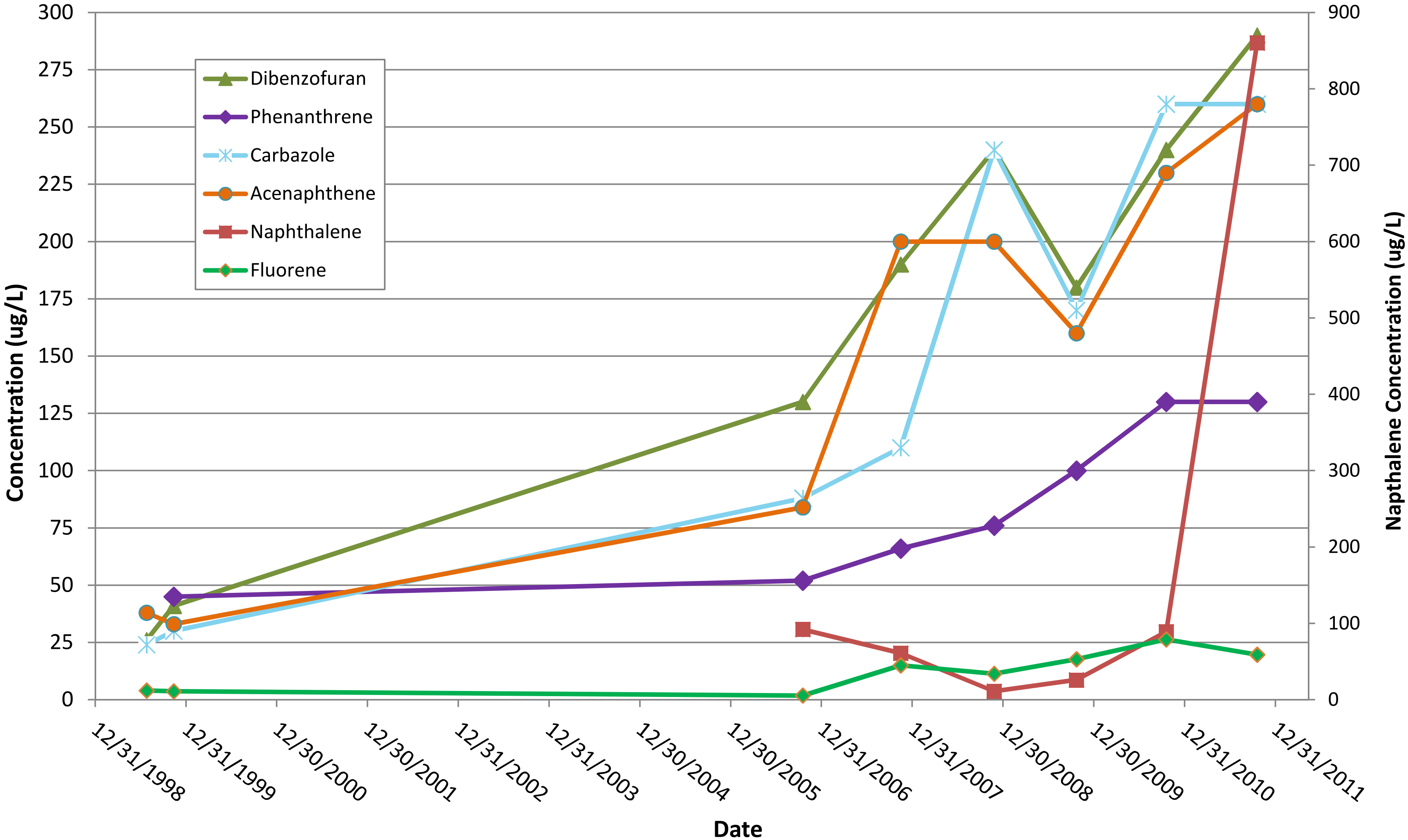
	MW-111D			
Compound	11/14/2007	2008	2006	10/19/2011
Benzo(a)pyrene	0.1 U	Not Sampled	Not Sampled	5.1 U
Benzo(a)anthracene	0.1 U			5.1 U
Chrysene	0.1 U			5.1 U
Benzo(b)fluoranthene	0.1 U			5.1 U
Benzo(k)fluoranthene	0.1 U			5.1 U
Indeno(1,2,3-cd)pyrene	0.1 U			5.1 U
Benzene	0.5 U			0.5 U
Naphthalene	0.1 U			5.1 U
Dibenzofuran	0.4 J			5.1 U
Phenanthrene	0.28 J			5.1 U
Carbazole	0.47 J			5.1 U

	MW-110D				
Compound	11/14/2007	11/24/2008	10/28/2009	10/142010	10/20/2011
Benzo(a)pyrene	5 U	5 U	0.1 U	0.1 U	5 U
Benzo(a)anthracene	5 U	5 U	0.1 U	0.1 U	5 U
Chrysene	5 U	5 U	0.1 U	0.1 U	5 U
Benzo(b)fluoranthene	5 U	5 U	0.1 U	0.1 U	5 U
Benzo(k)fluoranthene	5 U	5 U	0.1 U	0.1 U	5 U
Indeno(1,2,3-cd)pyrene	5 U	5 U	0.1 U	0.1 U	5 U
Benzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Naphthalene	5 U	0 J	0.1 U	0.1 U	5 U
Dibenzofuran	5 U	5 U	5 U	5 U	5 U
Phenanthrene	5 U	5 U	0.1 U	0.1 U	5 U
Carbazole	5 U	1 J	5 U	5 U	5 U

CDM Smith

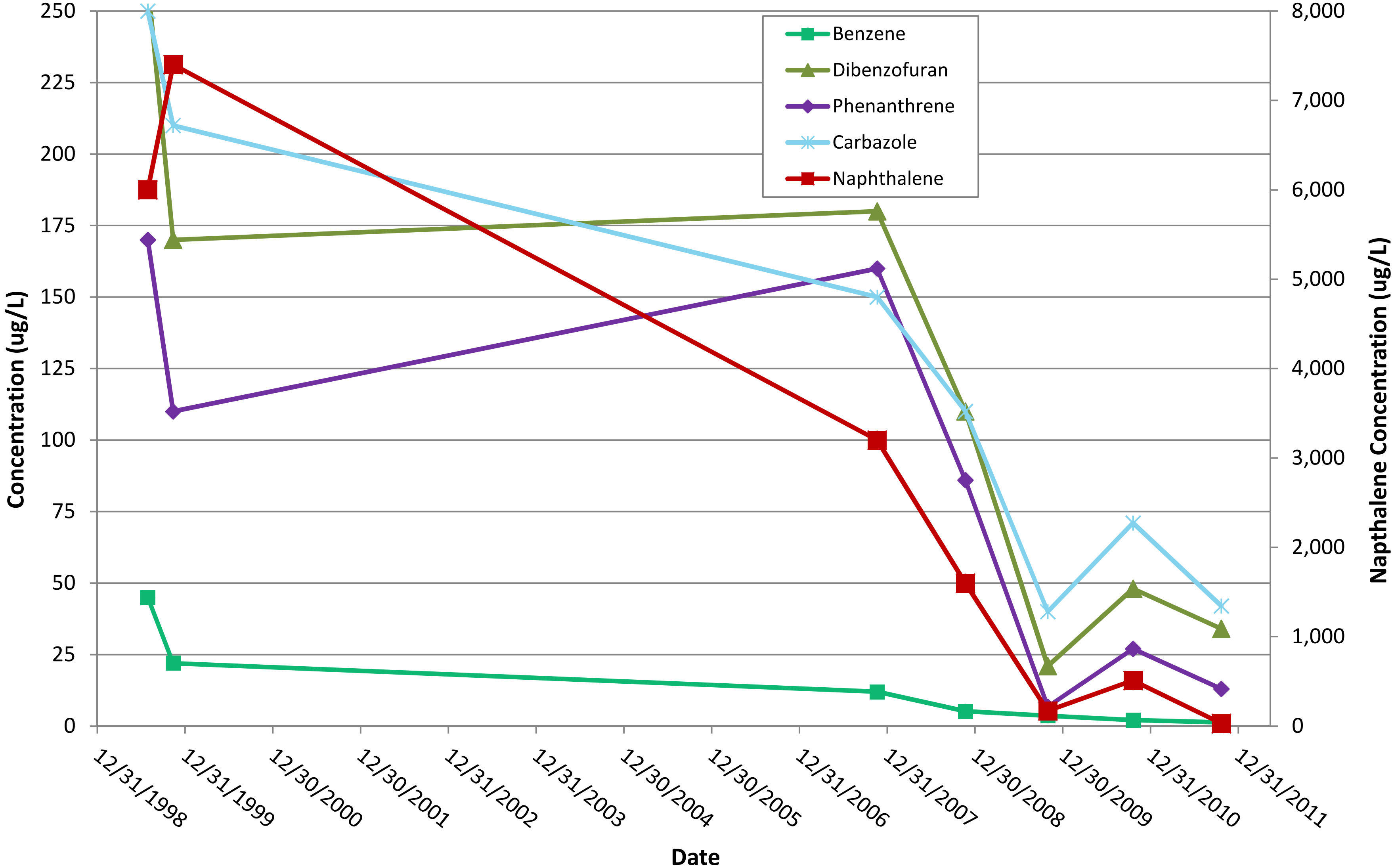
Federal Creosote Superfund Site
Manville, New Jersey

Figure 3-6
Contaminants of Concern Concentrations
Deep Bedrock



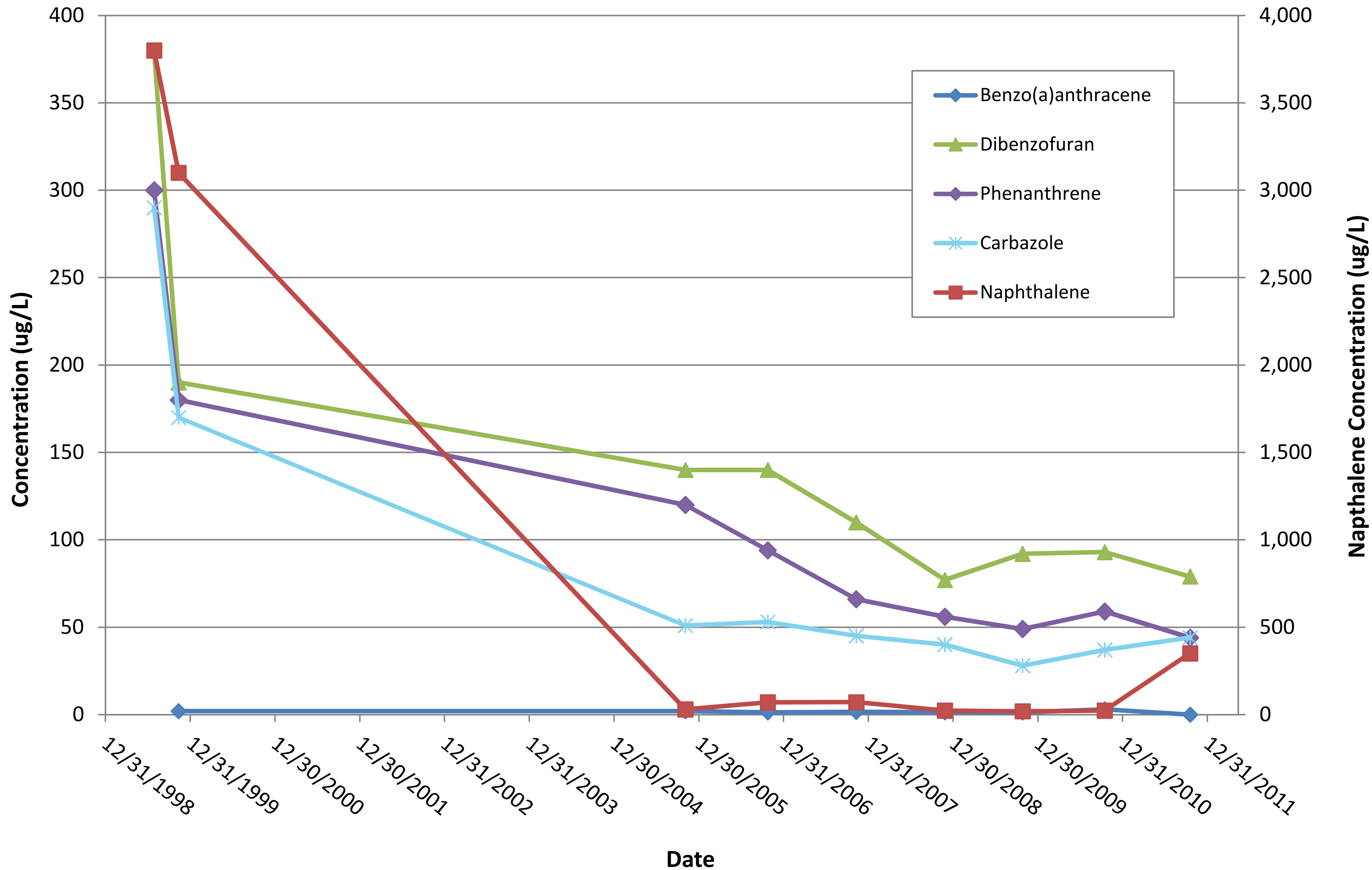
Note: Compounds included in trend analysis correspond to compounds shown on Figure 3-4.
The following compounds showed either non-detect or trace concentrations, and therefore are not included in the analysis: benzo(a)pyrene, benzo(a)antrhracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, ideno(1,2,3-cd)pyrene, and benzene.

Figure 3-7a
Trend Analysis - MW-111S



Note: Compounds included in trend analysis correspond to compounds shown on Figure 3-6.
The following compounds showed either non-detect or trace concentrations, and therefore are not included in the analysis: benzo(a)pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, and ideno(1,2,3-cd)pyrene.

Figure 3-7b
Trend Analysis - MW-2D/2RD



Note: Compounds included in trend analysis correspond to compounds shown on Figure 3-5.
The following compounds showed either non-detect or trace concentrations, and therefore are not included in the analysis: benzo(a)pyrene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, ideno(1,2,3-cd)pyrene, and benzene.

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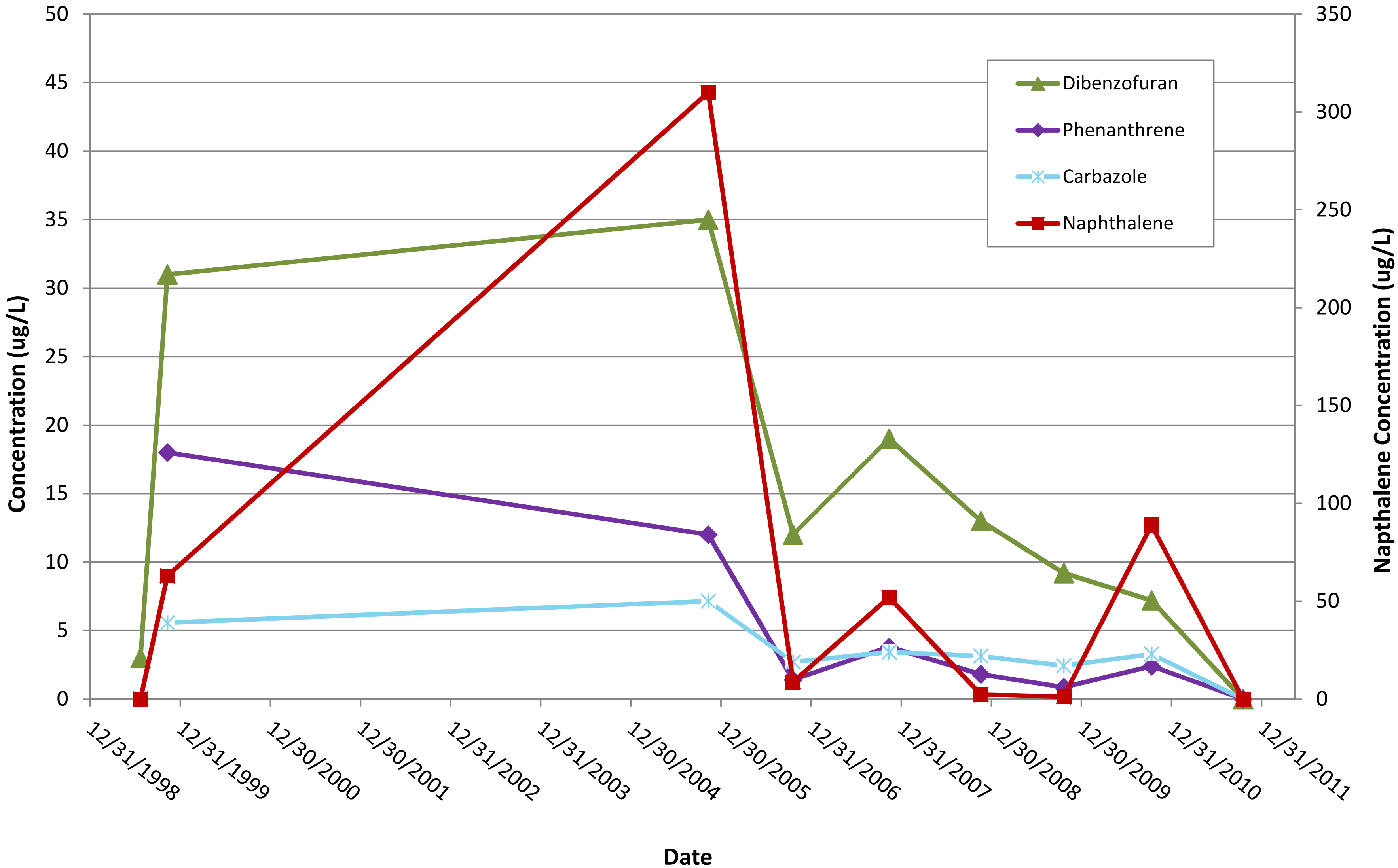
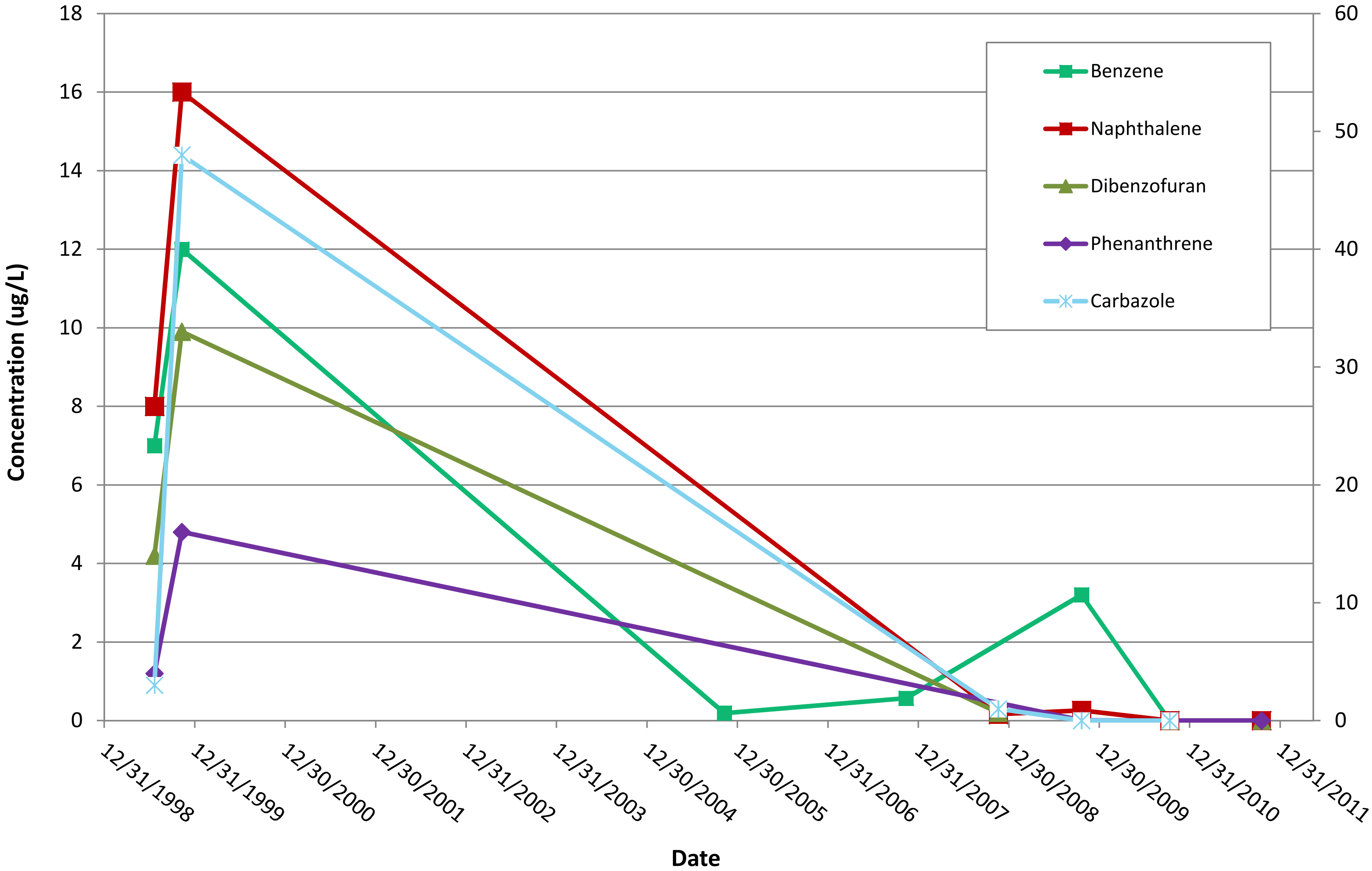


Note: Compounds included in trend analysis correspond to compounds shown on Figure 3-5.
The following compounds showed either non-detect or trace concentrations, and therefore are not included in the analysis: benzo(a)pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, ideno(1,2,3-cd)pyrene, and benzene.

Figure 3-7d
Trend Analysis - MW-114I



Note: Compounds included in trend analysis correspond to compounds shown on Figure 3-6.
The following compounds showed either non-detect or trace concentrations, and therefore are not included in the analysis: benzo(a)pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, and ideno(1,2,3-cd)pyrene.

Appendix A

FCR 5

FEDERAL CREOSOTE SUPERFUND SITE GROUNDWATER SAMPLING FIELD CHANGE REQUEST (FCR) FORM

REQUEST NO: 5 **DATE:** 9/14/2011

FCR TITLE: Elimination of Trace Selected Ion Monitoring (SIM) Semi-Volatile Organic Compound Analysis

DESCRIPTION: In two previous sampling events conducted in 2009 and 2010, groundwater samples were analyzed for both low and selected ion monitoring (SIM) semi-volatile organic compounds (SVOCs). The original purpose of using SIM analysis was due to the extremely low groundwater quality criteria set by New Jersey Department of Environmental Protection (NJDEP) for Benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene.

REASON FOR DEVIATION: Use of the SIM method in the past two sampling events has resulted in detections of outlier compounds, i.e. not contaminants of concern, in field blanks and groundwater samples. These detections present complications when reporting data, since they are well below the site-specific remedial goals in the 2002 operable unit (OU)3 Groundwater Record of Decision (ROD). The aquifer at Federal Creosote is not used as a source for drinking water and a groundwater classification exception area has been established for this site. Based on the past two rounds of sampling results, SIM analysis detected the contaminants in contaminated wells that can be detected using the low SVOC method. Therefore, use of trace SIM analysis did not add value to the monitoring program. In addition, the site specific remedial goals set in ROD are 5 μg/L, which can be detected using the low SVOC method. Therefore, using SIM analysis is considered unnecessary.

IMPACT ON PROJECT OBJECTIVES: None.

RECOMMENDED MODIFICATION: N/A

Signatures:

Grace Chen (Project Engineer) — Date: 9/16/11

Mike Popper (PM) — Date: 9/16/11

Todd Daniels (PM) — Date

Distribution: Richard Puvogel, EPA Remedial Project Manager
Todd Daniels, USACE Project Manager
Michael Popper, CDM Project Manager
Jeniffer Oxford, Regional QA Coordinator
Field Team
Project File

Appendix B

Well Survey Forms

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 2500068859
Well Tag ID: MW-1RS
Well Installation date: 7/10/07

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623444	
Easting (State Plane)	468516	

Cross streets (if applicable): ______

GPS Instrument used: ______
Datum: ______
Accuracy/Precision: ______

Well Construction Details

Type of well (Circle one)	Flush Mount	
Well lock\security type: ______	Pad lock	
Elevation (top of inner casing): ___	52.04'	
Surface casing material: ______	Steel	
Well casing material: ______	Stainless Steel	
Surface Casing diameter: ______	8	*inches*
Well Diameter: ______	4	*inches*
Well Depth (as installed): ______	35	*ftbgs*
Well Depth (as measured): 33.8___	33.5	*fttic*
Screened interval: ______	15(19-34'bgs)	*ft*
Open hole interval: ______		*ft*
Depth to water: ______	19.43	*ftbtic*
Date:	10/12/2011	*Time:* _14:45______

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	0	*% LEL*
O_2:	20.5	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		
Is measuring point marked?		No
Is the well clearly labeled?	Yes	
Flush mount - Is it secure from runoff?		No

Other Comments ____________________

Recommendations

Well needs to be redeveloped		No
Well needs to be re-surveyed.		No
Well needs to be repaired.		No
Well needs to be replaced.		No
Well needs to be properly abandoned.		No
No action necessary.	Yes	

Comments

Needs one new bolt

Inspected by: ____________________

Date of Inspection: ____________________

Reviewed by: ____________________ **(Print)**

____________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 2500068860
Well Tag ID: MW-2RS
Well Installation date: 7/13/07

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623559	
Easting (State Plane)	468836	

Cross streets (if applicable): ______ NA

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one) Flush Mount
Well lock\security type: N/A
Elevation (top of inner casing):
Surface casing material: Cast Iron
Well casing material: Stainless Steel
Surface Casing diameter: 9 *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): 32 *ftbgs*
Well Depth (as measured): 32.09 *fttic*
Screened interval: 17-32 *ft*
Open hole interval: *ft*
Depth to water: 16.07 *ftbtic*
Date: 10/12/2011 *Time:* 3:30

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable	0	*ppm*
Multi-gas/CGI meter Readings taken (if applicable):		
LEL:	0	*% LEL*
O_2:	20.2	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*
Do readings indicate unsafe conditions exist?		No

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		
Is measuring point marked?		No
Is the well clearly labeled?	Yes	
Flush mount - Is it secure from runoff?		No

Other Comments Under cap full of water needed to be bailed out

Recommendations

Well needs to be redeveloped
Well needs to be re-surveyed.
Well needs to be repaired.
Well needs to be replaced.
Well needs to be properly abandoned.
No action necessary.

Comments

Inspected by: ______________________

Date of Inspection: ______________________

Reviewed by: ______________________ **(Print)**

______________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 2500068861
Well Tag ID: MW-2RI
Well Installation date: 8/24/07

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623567	
Easting (State Plane)	468841	

Cross streets (if applicable):

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one) Flush Mount
Well lock\security type:
Elevation (top of inner casing):
Surface casing material:
Well casing material: Stainless
Surface Casing diameter: *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): *ftbgs*
Well Depth (as measured): 73.85 *fttic*
Screened interval: *ftbgs*
Open hole interval: *ft*
Depth to water: 16.73 *ftbtic*
Date: 10/12/2011 *Time: 3:15*

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	0	*% LEL*
O_2:	20.9	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		
Is measuring point marked?		No
Is the well clearly labeled?	Yes	
Flush mount - Is it secure from runoff?	Yes	

Other Comments ______________________________

Recommendations

Well needs to be redeveloped		No
Well needs to be re-surveyed.		No
Well needs to be repaired.		No
Well needs to be replaced.		No
Well needs to be properly abandoned.		No
No action necessary.	Yes	

Comments

Inspected by: ______________________________

Date of Inspection: ______________________________

Reviewed by: ______________________________ **(Print)**

______________________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 2500068862
Well Tag ID: MW-2RD
Well Installation date: 8/22/07

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623570	
Easting (State Plane)	468852	

Cross streets (if applicable): ______ NA

GPS Instrument used: ______
Datum: ______
Accuracy/Precision: ______

Well Construction Details

Type of well (Circle one)
Well lock\security type: ______
Elevation (top of inner casing): ______
Surface casing material: ______
Well casing material: ______ Stainless Steel
Surface Casing diameter: ______ 4 *inches*
Well Diameter: ______ *inches*
Well Depth (as installed): ______ 200 *ftbgs*
Well Depth (as measured): ______ 200 *fttic*
Screened interval: ______ *ft*
Open hole interval: ______ *ft*
Depth to water: ______ 16.42 *ftbtic*
Date: 10/12/2011 *Time:* 3:45

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	0	*% LEL*
O_2:	20.9	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		
Is measuring point marked?		No
Is the well clearly labeled?	Yes	
Flush mount - Is it secure from runoff?		No

Other Comments ____

Recommendations

Well needs to be redeveloped		No
Well needs to be re-surveyed.		No
Well needs to be repaired.		No
Well needs to be replaced.		No
Well needs to be properly abandoned.		No
No action necessary.	Yes	

Comments

Inspected by: ____________________

Date of Inspection: ____________________

Reviewed by: ____________________ **(Print)**

____________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: Not Available
Well Tag ID: MW-4D
Well Installation date: 3/16/98

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	624197.12	
Easting (State Plane)	470521.15	

Cross streets (if applicable): ______ NA

GPS Instrument used: ____________
Datum: ____________
Accuracy/Precision: ____________

Well Construction Details

Type of well (Circle one) Flush Mount Stick Up Multilevel Well*
Well lock\security type: ____________
Elevation (top of inner casing): ____________
Surface casing material: ____________
Well casing material: ____________
Surface Casing diameter: ____________ *inches*
Well Diameter: ____________ *inches*
Well Depth (as installed): ____________ *ftbgs*
Well Depth (as measured): ____________ *fttic*
Screened interval: ____________ *ft*
Open hole interval: ____________ *ft*
Depth to water: ____________ *ftbtic*
Date: ____________ *Time:* ____________

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): ____________ *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: ____________ *% LEL*
O_2: ____________ *40% Vol.*
CO: ____________ *ppm*
H_2S: ____________ *ppm*

Do readings indicate unsafe conditions exist?	Yes	No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Other Comments ____

____

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Inspected by: ______________________________

Date of Inspection: ______________________________

Reviewed by: ______________________________ **(Print)**

______________________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: Data Not Available
Well Tag ID: MW-5S
Well Installation date: 3/16/98

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623223.85	
Easting (State Plane)	469918.66	

Cross streets (if applicable): NA

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one) Flush Mount
Well lock\security type:
Elevation (top of inner casing):
Surface casing material:
Well casing material:
Surface Casing diameter: *inches*
Well Diameter: 2 *inches*
Well Depth (as installed): *ftbgs*
Well Depth (as measured): *fttic*
Screened interval: *ft*
Open hole interval: *ft*
Depth to water: 8.45 *ftbtic*
Date: 10/12/2011 *Time: 5:55*

* If multilevel well please see attached worksheet.

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	0	*% LEL*
O_2:	20.9	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

Is the concrete pad in good condition?
Is the well surface casing in good condition?
Is the surface casing vertical?
Is there an internal well seal?
Has there been physical damage to the well?
Does sounding depth match completed depth?
Is measuring point marked?
Is the well clearly labeled?
Flush mount - Is it secure from runoff?

Other Comments Missing a bolt, has no inner cap

Recommendations

Well needs to be redeveloped
Well needs to be re-surveyed.
Well needs to be repaired.
Well needs to be replaced.
Well needs to be properly abandoned.
No action necessary.

Comments

Inspected by: ____________
Date of Inspection: ____________
Reviewed by: ____________ **(Print)**
____________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: Data Not Available
Well Tag ID: MW-5I
Well Installation date: 2/24/98

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623229.01	
Easting (State Plane)	469920.92	

Cross streets (if applicable):

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one) Flush Mount
Well lock\security type:
Elevation (top of inner casing):
Surface casing material:
Well casing material: PVC
Surface Casing diameter: *inches*
Well Diameter: 2 *inches*
Well Depth (as installed): *ftbgs*
Well Depth (as measured): 54.90 *fttic*
Screened interval: *ft*
Open hole interval: *ft*
Depth to water: 9.80 *ftbtoc*
Date: 10/12/2011 *Time: 5:50*

* If multilevel well please see attached worksheet.

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	0	*% LEL*
O_2:	20.9	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

Is the concrete pad in good condition?
Is the well surface casing in good condition?
Is the surface casing vertical?
Is there an internal well seal?
Has there been physical damage to the well?
Does sounding depth match completed depth?
Is measuring point marked?
Is the well clearly labeled?
Flush mount - Is it secure from runoff?

Other Comments No bolts, cap does not fit well

Recommendations

Well needs to be redeveloped
Well needs to be re-surveyed.
Well needs to be repaired.
Well needs to be replaced.
Well needs to be properly abandoned.
No action necessary.

Comments

Inspected by: ____________________

Date of Inspection: ____________________

Reviewed by: ____________________ **(Print)**

____________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: Not Available
Well Tag ID: MW-6S
Well Installation date: 3/16/98

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623105.06	
Easting (State Plane)	469822.15	

Cross streets (if applicable):

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one)
Well lock\security type:
Elevation (top of inner casing):
Surface casing material:
Well casing material: PVC
Surface Casing diameter: *inches*
Well Diameter: 2 *inches*
Well Depth (as installed): *ftbgs*
Well Depth (as measured): *fttic*
Screened interval: *ft*
Open hole interval: *ft*
Depth to water: 9.15 *ftbtic*
Date: 10/12/2011 *Time: 6:25*

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	0	*% LEL*
O_2:	20.9	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		
Is measuring point marked?		No
Is the well clearly labeled?		No
Flush mount - Is it secure from runoff?		No

Other Comments ______________________________

Recommendations

Well needs to be redeveloped	
Well needs to be re-surveyed.	
Well needs to be repaired.	
Well needs to be replaced.	
Well needs to be properly abandoned.	
No action necessary.	Yes

Comments

Inspected by: ______________________________

Date of Inspection: ______________________________

Reviewed by: ______________________________ **(Print)**

______________________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: Not Available
Well Tag ID: MW-7S
Well Installation date: 3/10/98

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	622979.63	
Easting (State Plane)	469720.11	

Cross streets (if applicable): ______

GPS Instrument used: ______
Datum: ______
Accuracy/Precision: ______

Well Construction Details

Type of well (Circle one) Flush Mount
Well lock\security type: ______
Elevation (top of inner casing): ______
Surface casing material: ______
Well casing material: ______ PVC
Surface Casing diameter: ______ *inches*
Well Diameter: ______ 2 *inches*
Well Depth (as installed): ______ *ftbgs*
Well Depth (as measured): ______ *fttic*
Screened interval: ______ *ft*
Open hole interval: ______ *ft*
Depth to water: ______ 9.51 *ftbtic*
Date: 10/12/2011 *Time: 6:15*

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	0	*% LEL*
O_2:	20.9	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		
Is measuring point marked?		No
Is the well clearly labeled?		No
Flush mount - Is it secure from runoff?		No

Other Comments ______________________________

Recommendations

Well needs to be redeveloped	
Well needs to be re-surveyed.	
Well needs to be repaired.	
Well needs to be replaced.	
Well needs to be properly abandoned.	
No action necessary.	Yes

Comments

Inspected by: ______________________________

Date of Inspection: ______________________________

Reviewed by: ______________________________ **(Print)**

______________________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: Not Available
Well Tag ID: MW-8I
Well Installation date: 3/11/98

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	622563.37	
Easting (State Plane)	469379.19	

Cross streets (if applicable): ____

GPS Instrument used: ____
Datum: ____
Accuracy/Precision: ____

Well Construction Details

Type of well (Circle one) Flush Mount
Well lock\security type:
Elevation (top of inner casing):
Surface casing material:
Well casing material: PVC
Surface Casing diameter: ____ *inches*
Well Diameter: 2 *inches*
Well Depth (as installed): ____ *ftbgs*
Well Depth (as measured): ____ *fttic*
Screened interval: ____ *ft*
Open hole interval: ____ *ft*
Depth to water: 9.68 *ftbtic*
Date: 10/12/2011 *Time: 6:05*

* If multilevel well please see attached worksheet.

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	0	*% LEL*
O_2:	20.9	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

Is the concrete pad in good condition?
Is the well surface casing in good condition?
Is the surface casing vertical?
Is there an internal well seal?
Has there been physical damage to the well?
Does sounding depth match completed depth?
Is measuring point marked?
Is the well clearly labeled?
Flush mount - Is it secure from runoff?

Other Comments ______________________________

____

Recommendations

Well needs to be redeveloped
Well needs to be re-surveyed.
Well needs to be repaired.
Well needs to be replaced.
Well needs to be properly abandoned.
No action necessary.

Comments

Inspected by: ______________________________
Date of Inspection: ______________________________
Reviewed by: ______________________________ **(Print)**
______________________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: Not Available
Well Tag ID: MW-8D
Well Installation date: 3/11/98

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	622557.79	
Easting (State Plane)	469375.48	

Cross streets (if applicable):

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one) Flush Mount
Well lock\security type:
Elevation (top of inner casing):
Surface casing material:
Well casing material: PVC
Surface Casing diameter: *inches*
Well Diameter: 2 *inches*
Well Depth (as installed): *ftbgs*
Well Depth (as measured): *fttic*
Screened interval: *ft*
Open hole interval: *ft*
Depth to water: 11.21 *ftbtic*
Date: 10/12/2011 *Time: 6:00*

* If multilevel well please see attached worksheet.

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	0	*% LEL*
O_2:	20.9	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

Is the concrete pad in good condition?
Is the well surface casing in good condition?
Is the surface casing vertical?
Is there an internal well seal?
Has there been physical damage to the well?
Does sounding depth match completed depth?
Is measuring point marked?
Is the well clearly labeled?
Flush mount - Is it secure from runoff?

Other Comments ______________________________

Recommendations

Well needs to be redeveloped
Well needs to be re-surveyed.
Well needs to be repaired.
Well needs to be replaced.
Well needs to be properly abandoned.
No action necessary.

Comments

Inspected by: ______________________________
Date of Inspection: ______________________________
Reviewed by: ______________________________ **(Print)**
______________________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: Not Available
Well Tag ID: MW-9S
Well Installation date: 3/13/98

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623079.69	
Easting (State Plane)	469545.75	

Cross streets (if applicable): along East Camplain Road

GPS Instrument used: ______
Datum: ______
Accuracy/Precision: ______

Well Construction Details

Type of well (Circle one) Flush Mount
Well lock\security type:
Elevation (top of inner casing):
Surface casing material:
Well casing material: PVC
Surface Casing diameter: ______ *inches*
Well Diameter: 2 *inches*
Well Depth (as installed): ______ *ftbgs*
Well Depth (as measured): 27.60 *fttic*
Screened interval: ______ *ft*
Open hole interval: ______ *ft*
Depth to water: 12.20 *ftbtic*
Date: 10/12/2011 *Time:* 6:45

* If multilevel well please see attached worksheet.

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	0	*% LEL*
O_2:	20.9	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

Is the concrete pad in good condition? Yes
Is the well surface casing in good condition?
Is the surface casing vertical?
Is there an internal well seal?
Has there been physical damage to the well?
Does sounding depth match completed depth?
Is measuring point marked?
Is the well clearly labeled?
Flush mount - Is it secure from runoff?

Other Comments ______________________________

Recommendations

Well needs to be redeveloped
Well needs to be re-surveyed.
Well needs to be repaired.
Well needs to be replaced.
Well needs to be properly abandoned.
No action necessary.

Comments

Inspected by: ______________________________
Date of Inspection: ______________________________
Reviewed by: ______________________________ **(Print)**
______________________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: Not available
Well Tag ID: MW-10S
Well Installation date: 3/2/98

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623215.28	
Easting (State Plane)	469670.35	

Cross streets (if applicable): Along East Camplain Road

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one)	Flush Mount	
Well lock\security type:	-	
Elevation (top of inner casing):		
Surface casing material:	Cast Iron	
Well casing material:	PVC	
Surface Casing diameter:	4	*inches*
Well Diameter:	2	*inches*
Well Depth (as installed):	24	*ftbgs*
Well Depth (as measured):	24.42	*fttic*
Screened interval:	14-24	*ft*
Open hole interval:	-	*ft*
Depth to water:	10.52	*ftbtic*
Date:	10/12/2011	*Time: 5:00*

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	0	*% LEL*
O_2:	20.9	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

	Yes	No
Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?		No
Is the surface casing vertical?		No
Is there an internal well seal?		No
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		
Is measuring point marked?		No
Is the well clearly labeled?		No
Flush mount - Is it secure from runoff?		No

Other Comments On angle, No well seal.

Recommendations

Well needs to be redeveloped	
Well needs to be re-surveyed.	
Well needs to be repaired.	Yes
Well needs to be replaced.	Yes
Well needs to be properly abandoned.	
No action necessary.	

Comments

Inspected by: ______

Date of Inspection: ______

Reviewed by: ______ **(Print)**

______ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: Not Available
Well Tag ID: MW-10I
Well Installation date: 3/13/98

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623216.52	
Easting (State Plane)	469671.34	

Cross streets (if applicable): ______ along East Camplain Road

GPS Instrument used: ____________
Datum: ____________
Accuracy/Precision: ____________

Well Construction Details

Type of well (Circle one) Flush Mount
Well lock\security type: ____________
Elevation (top of inner casing): ____________
Surface casing material: ____________
Well casing material: PVC
Surface Casing diameter: ____________ *inches*
Well Diameter: 2 *inches*
Well Depth (as installed): 50 *ftbgs*
Well Depth (as measured): 49.70 *fttic*
Screened interval: 40-50 *ft*
Open hole interval: - *ft*
Depth to water: 11.01 *ftbtic*
Date: 10/12/2011 *Time: 5:05*

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable — 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	0	*% LEL*
O_2:	20.9	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist? — No

Well Condition

Is the concrete pad in good condition?	No
Is the well surface casing in good condition?	No
Is the surface casing vertical?	
Is there an internal well seal?	
Has there been physical damage to the well?	
Does sounding depth match completed depth?	
Is measuring point marked?	
Is the well clearly labeled?	
Flush mount - Is it secure from runoff?	

Other Comments ______________________________

Recommendations

Well needs to be redeveloped
Well needs to be re-surveyed.
Well needs to be repaired.
Well needs to be replaced.
Well needs to be properly abandoned.
No action necessary.

Comments

Inspected by: ______________________________
Date of Inspection: ______________________________
Reviewed by: ______________________________ **(Print)**
______________________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 2500068853
Well Tag ID: MW-12RS
Well Installation date: 7/17/07

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623365	
Easting (State Plane)	468877	

Cross streets (if applicable): Corner of Valerie Drive and Claire Court

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one)	Flush Mount	
Well lock\security type:	NA	
Elevation (top of inner casing):		
Surface casing material:	Cast Iron	
Well casing material:	Stainless	
Surface Casing diameter:	9	*inches*
Well Diameter:	4	*inches*
Well Depth (as installed):	30.5	*fttic*
Well Depth (as measured):	30.25	*fttic*
Screened interval:	15.5-30.5	*ft*
Open hole interval:	-	*ft*
Depth to water:	13.49	*ftbtic*
Date:	10/12/2011	*Time: 12:40*

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	2	*% LEL*
O_2:	20.0	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		
Is measuring point marked?		No
Is the well clearly labeled?	Yes	
Flush mount - Is it secure from runoff?		No

Other Comments ______________________________

Recommendations

Well needs to be redeveloped		No
Well needs to be re-surveyed.		No
Well needs to be repaired.		No
Well needs to be replaced.		No
Well needs to be properly abandoned.	Yes	
No action necessary.		

Comments

2 of the 3 screws holding down the cap will not go in.

Inspected by: ______________________________

Date of Inspection: ______________________________

Reviewed by: ______________________________ **(Print)**

______________________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-53648
Well Tag ID: MW-103S
Well Installation date: 1/13/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623310.71	
Easting (State Plane)	469353.02	

Cross streets (if applicable): ______ on Louise Drive

GPS Instrument used: ______
Datum: ______
Accuracy/Precision: ______

Well Construction Details

Type of well (Circle one)	Flush Mount	
Well lock\security type:		
Elevation (top of inner casing):		
Surface casing material:	Cast Iron	
Well casing material:	Stainless Steel	
Surface Casing diameter:	9	*inches*
Well Diameter:	4	*inches*
Well Depth (as installed):	32.4	*ftbgs*
Well Depth (as measured):	32.48	*fttic*
Screened interval:	17.4-32.4	*ft*
Open hole interval:	-	*ft*
Depth to water:	16.64	*ftbtic*
Date:	10/12/2011	*Time: 12:25*

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	3	*% LEL*
O_2:	20.9	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist?

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		
Is measuring point marked?		No
Is the well clearly labeled?	Yes	
Flush mount - Is it secure from runoff?		No

Other Comments ____

Recommendations

Well needs to be redeveloped		No
Well needs to be re-surveyed.		No
Well needs to be repaired.		No
Well needs to be replaced.		No
Well needs to be properly abandoned.		No
No action necessary.	Yes	

Comments

Inspected by: ____________________

Date of Inspection: ____________________

Reviewed by: ____________________ **(Print)**

____________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 2500068858
Well Tag ID: MW-104RS
Well Installation date: 7/11/07

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623712	
Easting (State Plane)	469239	

Cross streets (if applicable): NA

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one) Flush Mount
Well lock\security type: No lock but bolted down
Elevation (top of inner casing):
Surface casing material: Cast Iron
Well casing material: Stainless Steel
Surface Casing diameter: *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): *ftbgs*
Well Depth (as measured): 30.50 *fttic*
Screened interval: 15.5-30.5 *ft*
Open hole interval: *ft*
Depth to water: 14.14 *ftbtic*
Date: 10/12/2011 *Time: 4:00*

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	0	*% LEL*
O_2:	20.9	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		No
Is measuring point marked?		No
Is the well clearly labeled?	Yes	
Flush mount - Is it secure from runoff?		No

Other Comments ______________________________

Recommendations

Well needs to be redeveloped		No
Well needs to be re-surveyed.		No
Well needs to be repaired.		No
Well needs to be replaced.		No
Well needs to be properly abandoned.		No
No action necessary.	Yes	

Comments

Inspected by: A. Hunter, A. Eisburg

Date of Inspection: ______________________________

Reviewed by: ______________________________ **(Print)**

______________________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-53789
Well Tag ID: MW-105I
Well Installation date: 6/16/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623844.98	
Easting (State Plane)	469567.56	

Cross streets (if applicable): ______

GPS Instrument used: ______
Datum: ______
Accuracy/Precision: ______

Well Construction Details

Type of well (Circle one) Flush Mount Stick Up Multilevel Well*
Well lock\security type: ______
Elevation (top of inner casing): ______
Surface casing material: ______
Well casing material: ______
Surface Casing diameter: ______ *inches*
Well Diameter: ______ *inches*
Well Depth (as installed): ______ *ftbgs*
Well Depth (as measured): ______ *fttic*
Screened interval: ______ *ft*
Open hole interval: ______ *ft*
Depth to water: ______ *ftbtic*
Date: ______ *Time:* ______

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): ____________ *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	____________	*% LEL*
O_2:	____________	*40% Vol.*
CO:	____________	*ppm*
H_2S:	____________	*ppm*

Do readings indicate unsafe conditions exist?	Yes	No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Other Comments ____

____

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Inspected by: ______________________________

Date of Inspection: ______________________________

Reviewed by: ______________________________ **(Print)**

______________________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-53790
Well Tag ID:MW-105D
Well Installation date: 6/16/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623852.91	
Easting (State Plane)	469598.54	

Cross streets (if applicable): ______

GPS Instrument used: ______
Datum: ______
Accuracy/Precision: ______

Well Construction Details

Type of well (Circle one) Flush Mount Stick Up Multilevel Well*
Well lock\security type: ______
Elevation (top of inner casing): ______
Surface casing material: ______
Well casing material: ______
Surface Casing diameter: ______ *inches*
Well Diameter: ______ *inches*
Well Depth (as installed): ______ *ftbgs*
Well Depth (as measured): ______ *fttic*
Screened interval: ______ *ft*
Open hole interval: ______ *ft*
Depth to water: ______ *ftbtic*
Date: ______ *Time:* ______

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): ____________ *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: ____________ *% LEL*
O_2: ____________ *40% Vol.*
CO: ____________ *ppm*
H_2S: ____________ *ppm*

Do readings indicate unsafe conditions exist?	Yes	No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Other Comments ____

____

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Inspected by: ____________________

Date of Inspection: ____________________

Reviewed by: ____________________ **(Print)**

____________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-53654
Well Tag ID: MW-105S
Well Installation date: 2/3/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623848.42	
Easting (State Plane)	469586.31	

Cross streets (if applicable): ____________________

GPS Instrument used: ____________________
Datum: ____________________
Accuracy/Precision: ____________________

Well Construction Details

Type of well (Circle one) Flush Mount Stick Up Multilevel Well*
Well lock\security type: ____________________
Elevation (top of inner casing): ____________________
Surface casing material: ____________________
Well casing material: ____________________
Surface Casing diameter: ____________ *inches*
Well Diameter: ____________ *inches*
Well Depth (as installed): ____________ *ftbgs*
Well Depth (as measured): ____________ *fttic*
Screened interval: ____________ *ft*
Open hole interval: ____________ *ft*
Depth to water: ____________ *ftbtic*
Date: ____________ *Time:* ____________

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): ____________ *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	______________	*% LEL*
O_2:	______________	*40% Vol.*
CO:	______________	*ppm*
H_2S:	______________	*ppm*

Do readings indicate unsafe conditions exist?	Yes	No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Other Comments ____

____

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Inspected by: ____________________

Date of Inspection: ____________________

Reviewed by: ____________________ **(Print)**

____________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-53695
Well Tag ID: MW-106S
Well Installation date: 1/26/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623420.62	
Easting (State Plane)	469732.66	

Cross streets (if applicable): Near corner of Louise Drive and East Camplain Road

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one)	Flush Mount	
Well lock\security type:	Master Lock	
Elevation (top of inner casing):	-	
Surface casing material:	Cast Iron	
Well casing material:	Stainless Steel	
Surface Casing diameter:	8	*inches*
Well Diameter:	4	*inches*
Well Depth (as installed):	29.9	*ftbgs*
Well Depth (as measured):	30.05	*fttic*
Screened interval:	14.9-29.9	*ft*
Open hole interval:	-	*ft*
Depth to water:	14.51	*ftbtic*
Date:	10/12/2011	*Time: 12:15*

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	3	*% LEL*
O_2:	20.9	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist?

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		
Is measuring point marked?		No
Is the well clearly labeled?		No
Flush mount - Is it secure from runoff?		No

Other Comments Not clearly labeled

Recommendations

Well needs to be redeveloped		No
Well needs to be re-surveyed.		No
Well needs to be repaired.		No
Well needs to be replaced.		No
Well needs to be properly abandoned.		No
No action necessary.	Yes	

Comments

Inspected by: ____________________

Date of Inspection: ____________________

Reviewed by: ____________________ **(Print)**

____________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-53655
Well Tag ID: MW-107S
Well Installation date: 2/9/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	624046.57	
Easting (State Plane)	470250.56	

Cross streets (if applicable): NA

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one) Flush Mount
Well lock\security type:
Elevation (top of inner casing):
Surface casing material:
Well casing material: Stainless Steel
Surface Casing diameter: *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): *ftbgs*
Well Depth (as measured): 36.00 *fttic*
Screened interval: *ft*
Open hole interval: *ft*
Depth to water: 20.97 *ftbtic*
Date: 10/12/2011 *Time:* 5:20

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable — 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	0	*% LEL*
O_2:	20.9	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist? — No

Well Condition

	Yes	No
Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		
Is measuring point marked?		No
Is the well clearly labeled?		No
Flush mount - Is it secure from runoff?		No

Other Comments Loose bolts

Recommendations

Well needs to be redeveloped	
Well needs to be re-surveyed.	
Well needs to be repaired.	Yes
Well needs to be replaced.	
Well needs to be properly abandoned.	
No action necessary.	

Comments

Replace bolts

Inspected by: ______________________

Date of Inspection: ______________________

Reviewed by: ______________________ **(Print)**

______________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-53656
Well Tag ID: MW-108S
Well Installation date: 2/4/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623558.13	
Easting (State Plane)	470179.06	

Cross streets (if applicable): ______ NA

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one)
Well lock\security type:
Elevation (top of inner casing):
Surface casing material:
Well casing material: Stainless Steel
Surface Casing diameter: *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): *ftbgs*
Well Depth (as measured): 24.10 *fttic*
Screened interval: *ft*
Open hole interval: *ft*
Depth to water: 9.60 *ftbtic*
Date: 10/12/2011 *Time:* 5:33

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	0	*% LEL*
O_2:	20.9	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		
Is measuring point marked?		No
Is the well clearly labeled?		No
Flush mount - Is it secure from runoff?		No

Other Comments

Recommendations

Well needs to be redeveloped	
Well needs to be re-surveyed.	
Well needs to be repaired.	
Well needs to be replaced.	
Well needs to be properly abandoned.	
No action necessary.	Yes

Comments

Inspected by:

Date of Inspection:

Reviewed by: **(Print)**

(Sign)

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-53646
Well Tag ID: MW-109S
Well Installation date: 1/20/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	622667.03	
Easting (State Plane)	469203.71	

Cross streets (if applicable): ______ Along East Camplain East of Louise Drive

GPS Instrument used: ______
Datum: ______
Accuracy/Precision: ______

Well Construction Details

Type of well (Circle one)	Flush Mount	
Well lock\security type:	Master Lock	
Elevation (top of inner casing):		
Surface casing material:	Cast Iron	
Well casing material:	Stainless Steel	
Surface Casing diameter:	9	*inches*
Well Diameter:	4	*inches*
Well Depth (as installed):	32.5	*ftbgs*
Well Depth (as measured):	31.70	*fttic*
Screened interval:	14.5-32.5	*ft*
Open hole interval:	-	*ft*
Depth to water:	17.11	*ftbtic*
Date:	10/12/2011	*Time:* 11:30

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0.1 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	0	*% LEL*
O_2:	20.9	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist?

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		
Is measuring point marked?	Yes	
Is the well clearly labeled?	Yes	
Flush mount - Is it secure from runoff?		No

Other Comments ______________________________

____

Recommendations

Well needs to be redeveloped		No
Well needs to be re-surveyed.		No
Well needs to be repaired.		No
Well needs to be replaced.		No
Well needs to be properly abandoned.		No
No action necessary.	Yes	

Comments

Inspected by: ______________________________

Date of Inspection: ______________________________

Reviewed by: ______________________________ **(Print)**

______________________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-53647
Well Tag ID: MW-110S
Well Installation date: 1/21/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	622980.82	
Easting (State Plane)	469215.72	

Cross streets (if applicable): Florence Court (culdesac)

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one)	Flush Mount	
Well lock\security type:	Master Lock	
Elevation (top of inner casing):		
Surface casing material:	Cast Iron	
Well casing material:	Stainless Steel	
Surface Casing diameter:	9	*inches*
Well Diameter:	4	*inches*
Well Depth (as installed):	31.7	*ftbgs*
Well Depth (as measured):	31.85	*fttic*
Screened interval:	16.7-31.7	*ft*
Open hole interval:	-	*ft*
Depth to water:	16.32	*ftbtic*
Date:	10/12/2011	*Time: 11:55*

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0.1 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	3	*% LEL*
O_2:	20.9	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

	Yes	No
Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		
Is measuring point marked?		No
Is the well clearly labeled?	Yes	
Flush mount - Is it secure from runoff?		No

Other Comments ______________________________

____

Recommendations

	Yes	No
Well needs to be redeveloped		No
Well needs to be re-surveyed.		No
Well needs to be repaired.		No
Well needs to be replaced.		No
Well needs to be properly abandoned.		No
No action necessary.	Yes	

Comments

Inspected by: ______________________________

Date of Inspection: ______________________________

Reviewed by: ______________________________ **(Print)**

______________________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 2500068854
Well Tag ID: MW-110I
Well Installation date: 8/27/07

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	622984	
Easting (State Plane)	469198	

Cross streets (if applicable): Florence Court (culdesac)

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one)	Flush Mount	
Well lock\security type:	Master Lock	
Elevation (top of inner casing):		
Surface casing material:	Cast Iron	
Well casing material:	Stainless Steel	
Surface Casing diameter:	9	*inches*
Well Diameter:	4	*inches*
Well Depth (as installed):	70	*ftbgs*
Well Depth (as measured):	69.80	*fttic*
Screened interval:	60-70	*ftbgs*
Open hole interval:		*ft*
Depth to water:	17.11	*ftbtic*
Date:	10/12/2011	*Time:* 4:10

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable — 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	0	*% LEL*
O_2:	20.9	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist? — No

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		
Is measuring point marked?		No
Is the well clearly labeled?	Yes	
Flush mount - Is it secure from runoff?		No

Other Comments ______________________________

Recommendations

Well needs to be redeveloped		No
Well needs to be re-surveyed.		No
Well needs to be repaired.		No
Well needs to be replaced.		No
Well needs to be properly abandoned.		No
No action necessary.	Yes	

Comments

Inspected by: ______________________________

Date of Inspection: ______________________________

Reviewed by: ______________________________ **(Print)**

______________________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 2500068855
Well Tag ID: MW-110D
Well Installation date: 8/28/07

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	622982	
Easting (State Plane)	469227	

Cross streets (if applicable): ______ Florence at culdesac

GPS Instrument used: ______
Datum: ______
Accuracy/Precision: ______

Well Construction Details

Type of well (Circle one)	Flush Mount	
Well lock\security type:	Master Lock	
Elevation (top of inner casing):		
Surface casing material:	Cast Iron	
Well casing material:	Stainless Steel	
Surface Casing diameter:	9	*inches*
Well Diameter:	4	*inches*
Well Depth (as installed):	190	*ftbgs*
Well Depth (as measured):	198.2	*fttic*
Screened interval:	180-190	*ft*
Open hole interval:	-	*ft*
Depth to water:	17.01	*ftbtic*
Date:	10/12/2011	*Time: 4:15*

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable — 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	0	*% LEL*
O_2:	20.9	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist? — No

Well Condition

	Yes	No
Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		
Is measuring point marked?		No
Is the well clearly labeled?	Yes	
Flush mount - Is it secure from runoff?		No

Other Comments ______________________________

____

Recommendations

	Yes	No
Well needs to be redeveloped		No
Well needs to be re-surveyed.		No
Well needs to be repaired.		No
Well needs to be replaced.		No
Well needs to be properly abandoned.		No
No action necessary.	Yes	

Comments

Inspected by: ______________________________

Date of Inspection: ______________________________

Reviewed by: ______________________________ **(Print)**

______________________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-53779
Well Tag ID: MW-111S
Well Installation date: 2/24/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	622258.08	
Easting (State Plane)	468239.22	

Cross streets (if applicable): ____

GPS Instrument used: ____
Datum: ____
Accuracy/Precision: ____

Well Construction Details

Type of well (Circle one) Flush Mount
Well lock\security type: ____
Elevation (top of inner casing): ____
Surface casing material: Cast Iron
Well casing material: Stainless Steel
Surface Casing diameter: 8 *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): 37 *ftbgs*
Well Depth (as measured): 36.29 *fttic*
Screened interval: 31.8-36.8 *ft*
Open hole interval: ____ *ft*
Depth to water: 20.82 *ftbtic*
Date: 10/26/2011 *Time: 10:22*

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: ______________ *% LEL*
O_2: ______________ *40% Vol.*
CO: ______________ *ppm*
H_2S: ______________ *ppm*

Do readings indicate unsafe conditions exist?

Well Condition

Is the concrete pad in good condition?		No
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		No
Is measuring point marked?	Yes	
Is the well clearly labeled?	Yes	
Flush mount - Is it secure from runoff?		No

Other Comments One of the bolts is stripped

Recommendations

Well needs to be redeveloped	No
Well needs to be re-surveyed.	No
Well needs to be repaired.	No
Well needs to be replaced.	No
Well needs to be properly abandoned.	No
No action necessary.	No

Comments

Inspected by: ______________

Date of Inspection: 10/26/2011

Reviewed by: ______________ **(Print)**

______________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-53777
Well Tag ID: MW-111I
Well Installation date: 6/14/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	622235.09	
Easting (State Plane)	468252.9	

Cross streets (if applicable):

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one)	Flush Mount	
Well lock\security type:		
Elevation (top of inner casing):		
Surface casing material:	Cast Iron	
Well casing material:	Stainless Steel	
Surface Casing diameter:	8	*inches*
Well Diameter:	4	*inches*
Well Depth (as installed):	66	*ftbgs*
Well Depth (as measured):	65.28	*fttic*
Screened interval:	55-65	*ft*
Open hole interval:		*ft*
Depth to water:	21.46	*ftbtic*
Date:	10/26/2011	*Time:* 10:29

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: ______ *% LEL*
O_2: ______ *40% Vol.*
CO: ______ *ppm*
H_2S: ______ *ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

	Yes	No
Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		No
Is measuring point marked?		No
Is the well clearly labeled?	Yes	
Flush mount - Is it secure from runoff?		No

Other Comments ______

Recommendations

Well needs to be redeveloped	No
Well needs to be re-surveyed.	No
Well needs to be repaired.	No
Well needs to be replaced.	No
Well needs to be properly abandoned.	No
No action necessary.	No

Comments

Inspected by: ______
Date of Inspection: 10/26/2011
Reviewed by: ______ **(Print)**
______ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-53778
Well Tag ID: MW-111D
Well Installation date: 6/10/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	622289.52	
Easting (State Plane)	468234.5	

Cross streets (if applicable):

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one) Flush Mount
Well lock\security type:
Elevation (top of inner casing):
Surface casing material: Cast Iron
Well casing material: Stainless Steel
Surface Casing diameter: 8 *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): 200 *ftbgs*
Well Depth (as measured): 193.20 *fttic*
Screened interval: 182-192 *ft*
Open hole interval: *ft*
Depth to water: 21.40 *ftbtic*
Date: 10/26/2011 *Time:* 10:25

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	________	*% LEL*
O_2:	________	*40% Vol.*
CO:	________	*ppm*
H_2S:	________	*ppm*

Do readings indicate unsafe conditions exist?

Well Condition

	Yes	No
Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		No
Is measuring point marked?		No
Is the well clearly labeled?		No
Flush mount - Is it secure from runoff?		No

Other Comments No lock on inner seal

Recommendations

Well needs to be redeveloped	No
Well needs to be re-surveyed.	No
Well needs to be repaired.	No
Well needs to be replaced.	No
Well needs to be properly abandoned.	No
No action necessary.	No

Comments

Inspected by: ________

Date of Inspection: 10/26/2011

Reviewed by: ________ **(Print)**

________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-53782
Well Tag ID: MW-112S
Well Installation date: 2/22/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	622215.96	
Easting (State Plane)	470472.18	

Cross streets (if applicable): ______

GPS Instrument used: ______
Datum: ______
Accuracy/Precision: ______

Well Construction Details

Type of well (Circle one) Flush Mount
Well lock\security type:
Elevation (top of inner casing):
Surface casing material:
Well casing material: S. Steel
Surface Casing diameter: 10 *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): 24.9 *ftbgs*
Well Depth (as measured): 24.40 *fttic*
Screened interval: ______ *ft*
Open hole interval: ______ *ft*
Depth to water: 15.33 *ftbtic*
Date: 10/12/2011 *Time:* ______

* If multilevel well please see attached worksheet.

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	______	*% LEL*
O_2:	______	*40% Vol.*
CO:	______	*ppm*
H_2S:	______	*ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

	Yes	No
Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?	Yes	
Is measuring point marked?	Yes	
Is the well clearly labeled?		No
Flush mount - Is it secure from runoff?	Yes	

Other Comments ______

Recommendations

	Yes	No
Well needs to be redeveloped		
Well needs to be re-surveyed.		
Well needs to be repaired.		
Well needs to be replaced.		No
Well needs to be properly abandoned.		No
No action necessary.	Yes	

Comments

Inspected by: T. Horn

Date of Inspection: ______

Reviewed by: ______ **(Print)**

______ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-53780
Well Tag ID: MW-112I
Well Installation date: 6/22/09

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	622208.72	
Easting (State Plane)	470455.36	

Cross streets (if applicable): ____

GPS Instrument used: ____
Datum: ____
Accuracy/Precision: ____

Well Construction Details

Type of well (Circle one) Flush Mount
Well lock\security type: ____
Elevation (top of inner casing):
Surface casing material: ____
Well casing material: ____ S. Steel
Surface Casing diameter: ____ 10 *inches*
Well Diameter: ____ 4 *inches*
Well Depth (as installed): ____ 71 *ftbgs*
Well Depth (as measured): ____ 70.6 *fttic*
Screened interval: ____ *ft*
Open hole interval: ____ *ft*
Depth to water: ____ 16.09 *ftbtic*
Date: 10/12/2011 *Time:* ____

* If multilevel well please see attached worksheet.

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: ______ *% LEL*
O_2: ______ *40% Vol.*
CO: ______ *ppm*
H_2S: ______ *ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?	Yes	
Is measuring point marked?	Yes	
Is the well clearly labeled?		No
Flush mount - Is it secure from runoff?	Yes	

Other Comments ______

Recommendations

Well needs to be redeveloped		
Well needs to be re-surveyed.		
Well needs to be repaired.		
Well needs to be replaced.		No
Well needs to be properly abandoned.		No
No action necessary.	Yes	

Comments

Inspected by: T. Horn, Z. Swavely
Date of Inspection: 10/12/2011
Reviewed by: ______ **(Print)**
______ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-53781
Well Tag ID: MW-112D
Well Installation date: 6/10/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	622220.13	
Easting (State Plane)	470487.41	

Cross streets (if applicable):

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one)	Flush Mount	
Well lock\security type:	Master Lock	
Elevation (top of inner casing):		
Surface casing material:	Cast Iron	
Well casing material:	S. Steel	
Surface Casing diameter:	10	*inches*
Well Diameter:	4	*inches*
Well Depth (as installed):	200	*ftbgs*
Well Depth (as measured):	204.2	*fttic*
Screened interval:	184-194	*ft*
Open hole interval:	-	*ft*
Depth to water:	14.83	*ftbtic*
Date:	10/12/2011	*Time: 11:59*

* If multilevel well please see attached worksheet.

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable	0 *ppm*	
Multi-gas/CGI meter Readings taken (if applicable):		
LEL:	________________	*% LEL*
O_2:	________________	*40% Vol.*
CO:	________________	*ppm*
H_2S:	________________	*ppm*
Do readings indicate unsafe conditions exist?		No

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?	Yes	
Is measuring point marked?	Yes	
Is the well clearly labeled?		No
Flush mount - Is it secure from runoff?	Yes	

Other Comments ____

____

Recommendations

Well needs to be redeveloped		
Well needs to be re-surveyed.		
Well needs to be repaired.		No
Well needs to be replaced.		No
Well needs to be properly abandoned.		No
No action necessary.	Yes	

Comments

Inspected by: T. Horn, Z. Swavely

Date of Inspection: 10/12/2011

Reviewed by: ________________________________ **(Print)**

________________________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-53785
Well Tag ID: MW-113S
Well Installation date: 2/23/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623563.27	
Easting (State Plane)	471477.71	

Cross streets (if applicable): ______ NA

GPS Instrument used: ______
Datum: ______
Accuracy/Precision: ______

Well Construction Details

Type of well (Circle one) Flush Mount
Well lock\security type: ______ Padlock on compression
Elevation (top of inner casing): ______
Surface casing material: ______ Iron
Well casing material: ______ Stainless Steel
Surface Casing diameter: ______ *inches*
Well Diameter: ______ *inches*
Well Depth (as installed): ______ 23.8 *ftbgs*
Well Depth (as measured): ______ 22.80 *fttic*
Screened interval: ______ *ft*
Open hole interval: ______ *ft*
Depth to water: ______ 10.67 *ftbtic*
Date: 10/12/2011 *Time:* _14:00______

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	____________	*% LEL*
O_2:	____________	*40% Vol.*
CO:	____________	*ppm*
H_2S:	____________	*ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		No
Is measuring point marked?	Yes	
Is the well clearly labeled?	Yes	
Flush mount - Is it secure from runoff?	Yes	

Other Comments ____

____

Recommendations

Well needs to be redeveloped		
Well needs to be re-surveyed.		
Well needs to be repaired.		No
Well needs to be replaced.		No
Well needs to be properly abandoned.		No
No action necessary.	Yes	

Comments

Inspected by: Tom Horn

Date of Inspection: 10/12/2011

Reviewed by: ____________________ **(Print)**

____________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-53783
Well Tag ID: MW-113I
Well Installation date: 6/22/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623549.63	
Easting (State Plane)	471474.8	

Cross streets (if applicable):

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one) Flush Mount
Well lock\security type:
Elevation (top of inner casing):
Surface casing material: 10"
Well casing material: S. Steel
Surface Casing diameter: *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): 130 *ftbgs*
Well Depth (as measured): 130.72 *fttic*
Screened interval: *ft*
Open hole interval: *ft*
Depth to water: 10.24 *ftbtic*
Date: 10/12/2011 *Time: 13:00*

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): ______________ *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: ________________ *% LEL*
O_2: ________________ *40% Vol.*
CO: ________________ *ppm*
H_2S: ________________ *ppm*

Do readings indicate unsafe conditions exist?

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?	Yes	
Is measuring point marked?		No
Is the well clearly labeled?	Yes	
Flush mount - Is it secure from runoff?		No

Other Comments Flooded

Recommendations

Well needs to be redeveloped		No
Well needs to be re-surveyed.		
Well needs to be repaired.		No
Well needs to be replaced.		No
Well needs to be properly abandoned.		No
No action necessary.	Yes	

Comments

Screws / bolts unthreaded

Inspected by: Tom Horn
Date of Inspection: ________________
Reviewed by: ________________ **(Print)**
________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-53784
Well Tag ID: MW-113D
Well Installation date: 6/3/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623575.74	
Easting (State Plane)	471480.6	

Cross streets (if applicable): NA

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one)	Flush Mount	
Well lock\security type:		
Elevation (top of inner casing):		
Surface casing material:	Iron	
Well casing material:	Stainless Steel	
Surface Casing diameter:	10	*inches*
Well Diameter:	4	*inches*
Well Depth (as installed):	150	*ftbgs*
Well Depth (as measured):	156.80	*fttic*
Screened interval:		*ft*
Open hole interval:		*ft*
Depth to water:	10.92	*ftbtic*
Date:	10/12/2011	*Time:* 13:55

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable	0	*ppm*
Multi-gas/CGI meter Readings taken (if applicable):		
LEL:		*% LEL*
O_2:		*40% Vol.*
CO:		*ppm*
H_2S:		*ppm*
Do readings indicate unsafe conditions exist?		

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		No
Is measuring point marked?		No
Is the well clearly labeled?	Yes	
Flush mount - Is it secure from runoff?		No

Other Comments Flooded in outer casing

Recommendations

Well needs to be redeveloped	
Well needs to be re-surveyed.	
Well needs to be repaired.	
Well needs to be replaced.	
Well needs to be properly abandoned.	
No action necessary.	Yes

Comments

Inspected by: Tom Horn
Date of Inspection: 10/12/2011
Reviewed by: ____________ **(Print)**
____________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: _25-53788
Well Tag ID: _MW-114S
Well Installation date: _2/16/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623049.15	
Easting (State Plane)	470022.62	

Cross streets (if applicable): ______

GPS Instrument used: ______
Datum: ______
Accuracy/Precision: ______

Well Construction Details

Type of well (Circle one)	Stick up	
Well lock\security type:	Pad lock	
Elevation (top of inner casing):		
Surface casing material:	Steel	
Well casing material:	Stainless Steel	
Surface Casing diameter:	6	*inches*
Well Diameter:	4	*inches*
Well Depth (as installed):	19.6	*ftbgs*
Well Depth (as measured):	21.90	*fttic*
Screened interval:	6.6-19.6	*ft*
Open hole interval:	-	*ft*
Depth to water:		*ftbtoc*

Date: ______ *Time:* ______

* If multilevel well please see attached worksheet.

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	0	*% LEL*
O_2:	20.9	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		
Is measuring point marked?		No
Is the well clearly labeled?		No
Flush mount - Is it secure from runoff?		

Other Comments ______________________________

Recommendations

Well needs to be redeveloped		No
Well needs to be re-surveyed.		No
Well needs to be repaired.		No
Well needs to be replaced.		No
Well needs to be properly abandoned.		No
No action necessary.	Yes	

Comments

Inspected by: ______________________________

Date of Inspection: ______________________________

Reviewed by: ______________________________ **(Print)**

______________________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-53786
Well Tag ID: MW-114I
Well Installation date: 6/24/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623039.46	
Easting (State Plane)	470010.15	

Cross streets (if applicable):

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one)		Stick up
Well lock\security type:		
Elevation (top of inner casing):		
Surface casing material:	Steel	
Well casing material:	Stainless Steel	
Surface Casing diameter:	10	*inches*
Well Diameter:	4	*inches*
Well Depth (as installed):	70	*ftbgs*
Well Depth (as measured):	71.1	*fttic*
Screened interval:	60-70	*ft*
Open hole interval:	-	*ft*
Depth to water:	11.25	*ftbtic*
Date:	10/26/2011	*Time:* 12:20

* If multilevel well please see attached worksheet.

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	0	*% LEL*
O_2:	20.9	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

Is the concrete pad in good condition?			
Is the well surface casing in good condition?	Yes		
Is the surface casing vertical?	Yes		
Is there an internal well seal?	Yes		
Has there been physical damage to the well?		No	
Does sounding depth match completed depth?			
Is measuring point marked?	Yes		
Is the well clearly labeled?		No	
Flush mount - Is it secure from runoff?			N/A

Other Comments No lock

Recommendations

Well needs to be redeveloped
Well needs to be re-surveyed.
Well needs to be repaired.
Well needs to be replaced.
Well needs to be properly abandoned.
No action necessary.

Comments

Get a lock

Inspected by: ______
Date of Inspection: ______
Reviewed by: ______ **(Print)**
______ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: _25-53787
Well Tag ID: _MW-114D
Well Installation date: _6/11/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623056.65	
Easting (State Plane)	470031.72	

Cross streets (if applicable):

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one)	Stick up	
Well lock\security type:	NA	
Elevation (top of inner casing):	-	
Surface casing material:	Stainless	
Well casing material:	Stainless Steel	
Surface Casing diameter:	10	*inches*
Well Diameter:	4	*inches*
Well Depth (as installed):		*ftbgs*
Well Depth (as measured):	189	*fttic*
Screened interval:	168-178	*ft*
Open hole interval:	-	*ft*
Depth to water:	9.84	*ftbtic*
Date:	10/12/2011	*Time: 11:00*

* If multilevel well please see attached worksheet.

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 1.1 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	0	*% LEL*
O_2:	21.4	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		
Is measuring point marked?		No
Is the well clearly labeled?	Yes	
Flush mount - Is it secure from runoff?		

Other Comments ______________________________

Recommendations

Well needs to be redeveloped		No
Well needs to be re-surveyed.		No
Well needs to be repaired.		No
Well needs to be replaced.		No
Well needs to be properly abandoned.		No
No action necessary.	Yes	

Comments

The lock is broken off the well

Inspected by: ______________________________

Date of Inspection: ______________________________

Reviewed by: ______________________________ **(Print)**

______________________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-53793
Well Tag ID: MW-115S
Well Installation date: 3/11/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	624881.95	
Easting (State Plane)	470909.34	

Cross streets (if applicable): ______

GPS Instrument used: ______
Datum: ______
Accuracy/Precision: ______

Well Construction Details

Type of well (Circle one) Stick up
Well lock\security type:
Elevation (top of inner casing):
Surface casing material: Cast Iron
Well casing material: S. Steel
Surface Casing diameter: 8 *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): 30.6 *ftbgs*
Well Depth (as measured): 33.29 *fttic*
Screened interval: ______ *ft*
Open hole interval: ______ *ft*
Depth to water: 17.45 *ftbtic*
Date: 10/12/2011 *Time:* ______

* If multilevel well please see attached worksheet.

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: ____________ *% LEL*
O_2: ____________ *40% Vol.*
CO: ____________ *ppm*
H_2S: ____________ *ppm*

Do readings indicate unsafe conditions exist?

Well Condition

Is the concrete pad in good condition?		
Is the well surface casing in good condition?		No
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?	Yes	
Does sounding depth match completed depth?	Yes	
Is measuring point marked?		No
Is the well clearly labeled?		No
Flush mount - Is it secure from runoff?		

Other Comments No tag or written ID, No lock on outer casing lid

Recommendations

Well needs to be redeveloped		
Well needs to be re-surveyed.		
Well needs to be repaired.		No
Well needs to be replaced.		No
Well needs to be properly abandoned.		No
No action necessary.	Yes	

Comments

Inspected by: Z. Swavely
Date of Inspection: 10/12/2011
Reviewed by: ____________ **(Print)**
____________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-53791
Well Tag ID: MW-115I
Well Installation date: 6/23/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	624876.69	
Easting (State Plane)	470894.19	

Cross streets (if applicable): ____

GPS Instrument used: ____
Datum: ____
Accuracy/Precision: ____

Well Construction Details

Type of well (Circle one)	Stick up	
Well lock\security type:		
Elevation (top of inner casing):		
Surface casing material:	Cast Iron	
Well casing material:	S. Steel	
Surface Casing diameter:	8	*inches*
Well Diameter:	4	*inches*
Well Depth (as installed):	92	*ftbgs*
Well Depth (as measured):	94.36	*fttic*
Screened interval:		*ft*
Open hole interval:		*ft*
Depth to water:	18.60	*ftbtic*
Date:10/30/09	10/12/2011	*Time:* ____

* If multilevel well please see attached worksheet.

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable	0	*ppm*
Multi-gas/CGI meter Readings taken (if applicable):		
LEL:		*% LEL*
O_2:		*40% Vol.*
CO:		*ppm*
H_2S:		*ppm*
Do readings indicate unsafe conditions exist?		

Well Condition

Is the concrete pad in good condition?		
Is the well surface casing in good condition?		No
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?	Yes	
Does sounding depth match completed depth?	Yes	
Is measuring point marked?		No
Is the well clearly labeled?		No
Flush mount - Is it secure from runoff?		

Other Comments ______________________________

Recommendations

Well needs to be redeveloped		
Well needs to be re-surveyed.		
Well needs to be repaired.		No
Well needs to be replaced.		No
Well needs to be properly abandoned.		No
No action necessary.	Yes	

Comments

Inspected by: Z. Swavely
Date of Inspection: 10/12/2011
Reviewed by: ______________________ **(Print)**
______________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-53792
Well Tag ID: MW-115D
Well Installation date: 6/4/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	624885.22	
Easting (State Plane)	470924.78	

Cross streets (if applicable):

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one)	Stick up	
Well lock\security type:		
Elevation (top of inner casing):		
Surface casing material:	Cast Iron	
Well casing material:	S. Steel	
Surface Casing diameter:	8	*inches*
Well Diameter:	4	*inches*
Well Depth (as installed):	122	*ftbgs*
Well Depth (as measured):	123.9	*fttic*
Screened interval:		*ft*
Open hole interval:		*ft*
Depth to water:	18.02	*ftbtic*
Date:	10/12/2011	*Time:*

* If multilevel well please see attached worksheet.

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: ____________ *% LEL*
O_2: ____________ *40% Vol.*
CO: ____________ *ppm*
H_2S: ____________ *ppm*

Do readings indicate unsafe conditions exist?

Well Condition

Is the concrete pad in good condition?		
Is the well surface casing in good condition?		No
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?	Yes	
Is measuring point marked?		No
Is the well clearly labeled?		No
Flush mount - Is it secure from runoff?		

Other Comments No tag or ID, Top of outer casing (lid) is broken and inside is exposed

Recommendations

Well needs to be redeveloped		
Well needs to be re-surveyed.		
Well needs to be repaired.		No
Well needs to be replaced.		No
Well needs to be properly abandoned.		No
No action necessary.	Yes	

Comments

Inspected by: Z. Swavely
Date of Inspection: 10/12/2011
Reviewed by: ____________ **(Print)**
____________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-53794
Well Tag ID: MW-116I
Well Installation date: 3/18/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623689.65	
Easting (State Plane)	468690.61	

Cross streets (if applicable): ______ NA

GPS Instrument used: ______
Datum: ______
Accuracy/Precision: ______

Well Construction Details

Type of well (Circle one)	Flush Mount	
Well lock\security type:		
Elevation (top of inner casing):		
Surface casing material:	Cast Iron	
Well casing material:	Stainless Steel	
Surface Casing diameter:	8	*inches*
Well Diameter:	4	*inches*
Well Depth (as installed):	71.5	*ftbgs*
Well Depth (as measured):	70.9	*fttic*
Screened interval:	61.3-71.3	*ft*
Open hole interval:		*ft*
Depth to water:	17.38	*ftbtic*
Date:	10/26/2011	*Time:* *10:00*

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	________	*% LEL*
O_2:	________	*40% Vol.*
CO:	________	*ppm*
H_2S:	________	*ppm*

Do readings indicate unsafe conditions exist?

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		No
Is measuring point marked?		No
Is the well clearly labeled?		No
Flush mount - Is it secure from runoff?		No

Other Comments ____

____

Recommendations

Well needs to be redeveloped	No
Well needs to be re-surveyed.	No
Well needs to be repaired.	No
Well needs to be replaced.	No
Well needs to be properly abandoned.	No
No action necessary.	No

Comments

Inspected by: ________________________

Date of Inspection: 10/26/2011

Reviewed by: ________________________ **(Print)**

________________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-53801
Well Tag ID: MW-117S
Well Installation date: 3/10/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623769.97	
Easting (State Plane)	468101.97	

Cross streets (if applicable): corner of Main Street and Brockes Blvd.

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one) Flush Mount
Well lock\security type:
Elevation (top of inner casing):
Surface casing material: Cast Iron
Well casing material: S. Steel
Surface Casing diameter: 8 *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): 32.4 *ftbgs*
Well Depth (as measured): 31.89 *fttic*
Screened interval: *ft*
Open hole interval: *ft*
Depth to water: 13.47 *ftbtic*
Date: 10/12/2011 *Time:*

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	______________	*% LEL*
O_2:	______________	*40% Vol.*
CO:	______________	*ppm*
H_2S:	______________	*ppm*

Do readings indicate unsafe conditions exist?

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?	Yes	
Is measuring point marked?	Yes	
Is the well clearly labeled?		No
Flush mount - Is it secure from runoff?	Yes	

Other Comments ____

____

Recommendations

Well needs to be redeveloped		
Well needs to be re-surveyed.		
Well needs to be repaired.		No
Well needs to be replaced.		No
Well needs to be properly abandoned.		No
No action necessary.	Yes	

Comments

Inspected by: Z. Swavely

Date of Inspection: 10/12/2011

Reviewed by: ______________________ **(Print)**

______________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-53798
Well Tag ID: MW-117I
Well Installation date: 6/24/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623758.03	
Easting (State Plane)	468105.35	

Cross streets (if applicable): ______ Corner of Main Street and Brooks Blvd.

GPS Instrument used: ____
Datum: ____
Accuracy/Precision: ____

Well Construction Details

Type of well (Circle one) Flush Mount
Well lock\security type: ____
Elevation (top of inner casing): ____
Surface casing material: Cast Iron
Well casing material: S. Steel
Surface Casing diameter: 8 *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): 70.0 *ftbgs*
Well Depth (as measured): 69.65 *fttic*
Screened interval: ____ *ft*
Open hole interval: ____ *ft*
Depth to water: 13.76 *ftbtic*
Date: 10/12/2011 *Time:* ____

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable	0	*ppm*
Multi-gas/CGI meter Readings taken (if applicable):		
LEL:		*% LEL*
O_2:		*40% Vol.*
CO:		*ppm*
H_2S:		*ppm*
Do readings indicate unsafe conditions exist?		

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?	Yes	
Is measuring point marked?		No
Is the well clearly labeled?		No
Flush mount - Is it secure from runoff?	Yes	

Other Comments ______________________________

Recommendations

Well needs to be redeveloped		
Well needs to be re-surveyed.		
Well needs to be repaired.		No
Well needs to be replaced.		No
Well needs to be properly abandoned.		No
No action necessary.	Yes	

Comments

Inspected by: Z. Swavely
Date of Inspection: 10/12/2011
Reviewed by: ______________________ **(Print)**
______________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-53798
Well Tag ID: MW-117D
Well Installation date: 6/24/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623782.98	
Easting (State Plane)	468098.4	

Cross streets (if applicable): Corner of Brocks Blvd and Main Street

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one) Flush Mount
Well lock\security type:
Elevation (top of inner casing):
Surface casing material: Cast Iron
Well casing material: S. Steel
Surface Casing diameter: 8 *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): 126.0 *ftbgs*
Well Depth (as measured): 125.49 *fttic*
Screened interval: *ft*
Open hole interval: *ft*
Depth to water: 13.12 *ftbtic*
Date: 10/12/2011 *Time:*

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	______	*% LEL*
O_2:	______	*40% Vol.*
CO:	______	*ppm*
H_2S:	______	*ppm*

Do readings indicate unsafe conditions exist?

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?	Yes	
Is measuring point marked?	Yes	
Is the well clearly labeled?		No
Flush mount - Is it secure from runoff?	Yes	

Other Comments ______

Recommendations

Well needs to be redeveloped		
Well needs to be re-surveyed.		
Well needs to be repaired.		No
Well needs to be replaced.		No
Well needs to be properly abandoned.		No
No action necessary.	Yes	

Comments

Inspected by: Z. Swavely
Date of Inspection: 10/12/2011
Reviewed by: ______ **(Print)**
______ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-53802
Well Tag ID: MW-118S
Well Installation date: 3/9/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	624364.84	
Easting (State Plane)	468162.77	

Cross streets (if applicable): Main St. and Knopf St.

GPS Instrument used: ______
Datum: ______
Accuracy/Precision: ______

Well Construction Details

Type of well (Circle one) Flush Mount
Well lock\security type: _
Elevation (top of inner casing):
Surface casing material: Iron
Well casing material: S. Steel
Surface Casing diameter: 10 *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): 31.4 *ftbgs*
Well Depth (as measured): 31.00 *fttic*
Screened interval: ______ *ft*
Open hole interval: ______ *ft*
Depth to water: ______ *ftbtic*
Date: 10/12/2011 *Time:* 14:30

* If multilevel well please see attached worksheet.

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	______	*% LEL*
O_2:	______	*40% Vol.*
CO:	______	*ppm*
H_2S:	______	*ppm*

Do readings indicate unsafe conditions exist?

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?	Yes	
Is measuring point marked?	Yes	
Is the well clearly labeled?	Yes	
Flush mount - Is it secure from runoff?	Yes	

Other Comments Buried under mulch

Recommendations

Well needs to be redeveloped		
Well needs to be re-surveyed.		
Well needs to be repaired.		No
Well needs to be replaced.		No
Well needs to be properly abandoned.		No
No action necessary.	Yes	

Comments

Inspected by: Tom Horn

Date of Inspection: 10/12/2011

Reviewed by: ______ **(Print)**

______ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: _25-53799
Well Tag ID: _MW-118I
Well Installation date: _6/21/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	624350.37	
Easting (State Plane)	468156.72	

Cross streets (if applicable): Main St. and Knopf St.

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one) Flush Mount
Well lock\security type: Padlock with compression cap
Elevation (top of inner casing):
Surface casing material:
Well casing material:
Surface Casing diameter: *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): *ftbgs*
Well Depth (as measured): 79.78 *fttic*
Screened interval: *ft*
Open hole interval: *ft*
Depth to water: 15.75 *ftbtic*
Date: 10/12/2011 *Time:* _14:20

* If multilevel well please see attached worksheet.

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: ______ *% LEL*
O_2: ______ *40% Vol.*
CO: ______ *ppm*
H_2S: ______ *ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?	Yes	
Is measuring point marked?	Yes	
Is the well clearly labeled?	Yes	
Flush mount - Is it secure from runoff?	Yes	

Other Comments Buried under mulch

Recommendations

Well needs to be redeveloped		No
Well needs to be re-surveyed.		No
Well needs to be repaired.		No
Well needs to be replaced.		No
Well needs to be properly abandoned.		No
No action necessary.	Yes	

Comments

Inspected by: Tom Horn
Date of Inspection: 10/12/2011
Reviewed by: ______ **(Print)**
______ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-53800
Well Tag ID: MW-118D
Well Installation date: 6/21/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	624371.99	
Easting (State Plane)	468176.74	

Cross streets (if applicable): Main St. and Knopf St.

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one)	Flush Mount	
Well lock\security type:		
Elevation (top of inner casing):		
Surface casing material:	Iron	
Well casing material:	S. Steel	
Surface Casing diameter:	10	*inches*
Well Diameter:	4	*inches*
Well Depth (as installed):	300	*ftbgs*
Well Depth (as measured):	+ 246.7	*fttic*
Screened interval:		*ft*
Open hole interval:		*ft*
Depth to water:	16.23	*ftbtic*
Date:	10/12/2011	*Time:* 14:40

* If multilevel well please see attached worksheet.

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	____________	*% LEL*
O_2:	____________	*40% Vol.*
CO:	____________	*ppm*
H_2S:	____________	*ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?	Yes	
Is measuring point marked?	Yes	
Is the well clearly labeled?	Yes	
Flush mount - Is it secure from runoff?	Yes	

Other Comments Buried under mulch

Recommendations

Well needs to be redeveloped		No
Well needs to be re-surveyed.		No
Well needs to be repaired.		No
Well needs to be replaced.		No
Well needs to be properly abandoned.		No
No action necessary.	Yes	

Comments

Total depth is difficult to determine because the possible bottom is very soft making it hard to figure out

Inspected by: Tom Horn

Date of Inspection: 10/12/2011

Reviewed by: ____________ **(Print)**

____________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-54916
Well Tag ID: MW-119S
Well Installation date: 8/31/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623165.44	
Easting (State Plane)	468145.34	

Cross streets (if applicable): ______ NA

GPS Instrument used: ______
Datum: ______
Accuracy/Precision: ______

Well Construction Details

Type of well (Circle one) Flush Mount
Well lock\security type: ______
Elevation (top of inner casing): ______
Surface casing material: ______ Cast Iron
Well casing material: ______ Stainless Steel
Surface Casing diameter: ______ 8 *inches*
Well Diameter: ______ 4 *inches*
Well Depth (as installed): ______ 35.00 *ftbgs*
Well Depth (as measured): ______ 33.75 *fttic*
Screened interval: ______ 19.2-34.2 *ft*
Open hole interval: ______ *ft*
Depth to water: ______ 16.23 *ftbtic*
Date: 10/12/2011 *Time:* 13:55

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable — 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	0	*% LEL*
O_2:	20.9	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist? — No

Well Condition

	Yes	No
Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?		No
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?	Yes	
Does sounding depth match completed depth?	Yes	
Is measuring point marked?		No
Is the well clearly labeled?		No
Flush mount - Is it secure from runoff?		No

Other Comments The extent of damage is flush mount cover cracked in center, missing portion of cap by screw hole, missing bolt

Recommendations

	Yes	No
Well needs to be redeveloped		No
Well needs to be re-surveyed.		No
Well needs to be repaired.	Yes	
Well needs to be replaced.		No
Well needs to be properly abandoned.		No
No action necessary.		No

Comments

Replace cap

Inspected by:

Date of Inspection: 10/12/2011

Reviewed by: **(Print)**

(Sign)

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-54912
Well Tag ID: MW-121S
Well Installation date: 8/30/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	622672.98	
Easting (State Plane)	468704.12	

Cross streets (if applicable):

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one) Flush Mount
Well lock\security type: Padlocked compression cap
Elevation (top of inner casing):
Surface casing material:
Well casing material:
Surface Casing diameter: *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): 34.6 *ftbgs*
Well Depth (as measured): TOIC 34.22 *fttic*
Screened interval: *ft*
Open hole interval: *ft*
Depth to water: 17.61 *ftbtic*
Date: 10/12/2011 *Time: 11:40*

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:		*% LEL*
O_2:		*40% Vol.*
CO:		*ppm*
H_2S:		*ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		
Is measuring point marked?		
Is the well clearly labeled?	Yes	
Flush mount - Is it secure from runoff?	Yes	

Other Comments Bolts to flush-mount box are stipped, require replacement

Recommendations

Well needs to be redeveloped		
Well needs to be re-surveyed.		
Well needs to be repaired.		No
Well needs to be replaced.		No
Well needs to be properly abandoned.		No
No action necessary.	Yes	

Comments

Inspected by: T. Horn

Date of Inspection: 10/12/2011

Reviewed by: ____________ **(Print)**

____________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote

Site Address: Manville

Site County: Somerset

Site State: New Jersey

EPA Site ID Number: NJ0001900281

Site Owner: EPA

EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-54913

Well Tag ID: MW-122S

Well Installation date: 8/29/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	622234.16	
Easting (State Plane)	462998.29	

Cross streets (if applicable): ______ NA

GPS Instrument used:

Datum:

Accuracy/Precision:

Well Construction Details

Type of well (Circle one)	Flush Mount	
Well lock\security type:		
Elevation (top of inner casing):		
Surface casing material:	Cast Iron	
Well casing material:	Stainless Steel	
Surface Casing diameter:	8	*inches*
Well Diameter:	4	*inches*
Well Depth (as installed):	34.80	*ftbgs*
Well Depth (as measured):	33.70	*fttic*
Screened interval:	19.2-34.2	*ft*
Open hole interval:		*ft*
Depth to water:	19.37	*ftbtic*
Date:	10/12/2011	*Time: 1:45*

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	0	*% LEL*
O_2:	20.9	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		
Is measuring point marked?		
Is the well clearly labeled?		No
Flush mount - Is it secure from runoff?		No

Other Comments ______________________________________

Recommendations

Well needs to be redeveloped		No
Well needs to be re-surveyed.		No
Well needs to be repaired.		No
Well needs to be replaced.		No
Well needs to be properly abandoned.		No
No action necessary.	Yes	

Comments

Inspected by: ____________________

Date of Inspection: 10/12/2011

Reviewed by: ____________________ **(Print)**

____________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 2500068843
Well Tag ID: MW-123S
Well Installation date: 7/9/07

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	624358	
Easting (State Plane)	469388	

Cross streets (if applicable): ______

GPS Instrument used: ______
Datum: ______
Accuracy/Precision: ______

Well Construction Details

Type of well (Circle one) Flush Mount
Well lock\security type: Master Lock - Key lock
Elevation (top of inner casing): -
Surface casing material: Cast Iron
Well casing material: Stainless Steel
Surface Casing diameter: 9 *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): ______ *ftbgs*
Well Depth (as measured): 31.97 *ft tic*
Screened interval: 17 - 32 *ft*
Open hole interval: ______ *ft*
Depth to water: 16.06 *ft tic*
Date: 10/20/2011 *Time:* *13:15*

* If multilevel well please see attached worksheet.

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable	0.9	*ppm*
Multi-gas/CGI meter Readings taken (if applicable):		
LEL:	0	*% LEL*
O_2:	20.9	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*
Do readings indicate unsafe conditions exist?		No

Well Condition

Is the concrete pad in good condition?		No
Is the well surface casing in good condition?		No
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?	Yes	
Does sounding depth match completed depth?	Yes	
Is measuring point marked?		No
Is the well clearly labeled?	Yes	
Flush mount - Is it secure from runoff?		No

Other Comments Chipped concrete pad, Broken lip on casing 4" long, Broken cast iron well cap (missing), Screw holes all but 1 broke

Recommendations

Well needs to be redeveloped	
Well needs to be re-surveyed.	
Well needs to be repaired.	Yes
Well needs to be replaced.	
Well needs to be properly abandoned.	
No action necessary.	

Comments

Inspected by: ______________________

Date of Inspection: ______________________

Reviewed by: ______________________ **(Print)**

______________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 2500068844
Well Tag ID: MW-123I
Well Installation date: 8/20/07

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	624382	
Easting (State Plane)	469379	

Cross streets (if applicable):

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one)	Flush Mount	
Well lock\security type:	Screwed down but lid missing	
Elevation (top of inner casing):		
Surface casing material:	Cast Iron (missing)	
Well casing material:	S. Steel	
Surface Casing diameter:	8	*inches*
Well Diameter:	4	*inches*
Well Depth (as installed):		*bgs*
Well Depth (as measured):	59.62	*fttic*
Screened interval:	50-60	*ft*
Open hole interval:		*ft*
Depth to water:	16.06	*ftbtic*
Date:	10/20/2011	*Time:*

* If multilevel well please see attached worksheet.

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 2.1 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	0	*% LEL*
O_2:	20.9	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?		No (missing)
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?	Yes	
Does sounding depth match completed depth?		No
Is measuring point marked?		No
Is the well clearly labeled?	Yes	
Flush mount - Is it secure from runoff?		No

Other Comments ______________________________

Recommendations

Well needs to be redeveloped
Well needs to be re-surveyed.
Well needs to be repaired.
Well needs to be replaced.
Well needs to be properly abandoned.
No action necessary.

Comments

Inspected by: ______________________
Date of Inspection: ______________________
Reviewed by: ______________________ **(Print)**
______________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 2500068845
Well Tag ID: MW-123D
Well Installation date: 8/21/07

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	624378	
Easting (State Plane)	469368	

Cross streets (if applicable):

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one)	Flush Mount	
Well lock\security type:	Well cap	
Elevation (top of inner casing):		
Surface casing material:	Cast Iron	
Well casing material:	Stainless Steel	
Surface Casing diameter:	8	*inches*
Well Diameter:	4	*inches*
Well Depth (as installed):	200	*ftbgs*
Well Depth (as measured):	200	*fttic*
Screened interval:	188-198	*ft*
Open hole interval:		*ft*
Depth to water:	16.75	*ftbtic*
Date:	10/20/2011	*Time:* *12:45*

* If multilevel well please see attached worksheet.

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 3.0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	0	*% LEL*
O_2:	20.9	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

Is the concrete pad in good condition?		No
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?	Yes	
Is measuring point marked?		No
Is the well clearly labeled?	Yes	
Flush mount - Is it secure from runoff?		No

Other Comments

Recommendations

Well needs to be redeveloped		No
Well needs to be re-surveyed.		No
Well needs to be repaired.		No
Well needs to be replaced.		No
Well needs to be properly abandoned.		No
No action necessary.	Yes	

Comments

Inspected by: Allan Hunter
Date of Inspection: 10/20/2011
Reviewed by: **(Print)**
(Sign)

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 2500068846
Well Tag ID: MW-124S
Well Installation date: 8/3/07

	From Log	By GPS
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623881	
Easting (State Plane)	468476	

Cross streets (if applicable):

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one)	Flush Mount	
Well lock\security type:		
Elevation (top of inner casing):		
Surface casing material:	Cast Iron	
Well casing material:	Stainless Steel	
Surface Casing diameter:	8	*inches*
Well Diameter:	4	*inches*
Well Depth (as installed):	33.00	*ftbgs*
Well Depth (as measured):	32.78	*fttic*
Screened interval:	18-33	*ft*
Open hole interval:		*ft*
Depth to water:	15.57	*ftbtic*
Date:	10/26/2011	*Time:* 09:40

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	0	*% LEL*
O_2:	20.9	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?		
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		No
Is measuring point marked?		No
Is the well clearly labeled?		No
Flush mount - Is it secure from runoff?		No

Other Comments ______

Recommendations

Well needs to be redeveloped	No
Well needs to be re-surveyed.	No
Well needs to be repaired.	No
Well needs to be replaced.	No
Well needs to be properly abandoned.	No
No action necessary.	

Comments

Needs bolts to secure well

Inspected by: Allan Hunter

Date of Inspection: 10/26/2011

Reviewed by: ______ **(Print)**

______ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 2500068847
Well Tag ID: MW-124I
Well Installation date: 8/13/07

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623890	
Easting (State Plane)	468472	

Cross streets (if applicable): ______

GPS Instrument used: ______
Datum: ______
Accuracy/Precision: ______

Well Construction Details

Type of well (Circle one) Flush Mount
Well lock\security type: ______
Elevation (top of inner casing): ______
Surface casing material: Cast Iron
Well casing material: Stainless Steel
Surface Casing diameter: 8 *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): 75.00 *fttic*
Well Depth (as measured): 59.83 *fttic*
Screened interval: 53.5-63.5 *ft*
Open hole interval: ______ *ft*
Depth to water: 15.75 *ftbtic*
Date: 10/26/2011 *Time:* _09:38

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	______________	*% LEL*
O_2:	______________	*40% Vol.*
CO:	______________	*ppm*
H_2S:	______________	*ppm*

Do readings indicate unsafe conditions exist?

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?		No
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		No
Is measuring point marked?		No
Is the well clearly labeled?		No
Flush mount - Is it secure from runoff?		No

Other Comments Needs bolts to secure well and also needs an internal cap.

Recommendations

Well needs to be redeveloped	No
Well needs to be re-surveyed.	No
Well needs to be repaired.	No
Well needs to be replaced.	No
Well needs to be properly abandoned.	No
No action necessary.	No

Comments

Inspected by: ______________

Date of Inspection: 10/26/2011

Reviewed by: ______________ **(Print)**

______________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID:2500068848
Well Tag ID: MW-124D
Well Installation date: 8/13/07

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	623903	
Easting (State Plane)	468468	

Cross streets (if applicable):

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one) Flush Mount
Well lock\security type:
Elevation (top of inner casing):
Surface casing material: Cast Iron
Well casing material: Stainless Steel
Surface Casing diameter: 8 *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): 200 *ftbgs*
Well Depth (as measured): 204.8 *fttic*
Screened interval: 185-195 *ft*
Open hole interval: *ft*
Depth to water: 16.24 *ftbtic*
Date: 10/26/2011 *Time: 09:37*

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: ______ *% LEL*
O_2: ______ *40% Vol.*
CO: ______ *ppm*
H_2S: ______ *ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

Is the concrete pad in good condition?	Yes
Is the well surface casing in good condition?	Yes
Is the surface casing vertical?	Yes
Is there an internal well seal?	No
Has there been physical damage to the well?	No
Does sounding depth match completed depth?	No
Is measuring point marked?	No
Is the well clearly labeled?	No
Flush mount - Is it secure from runoff?	No

Other Comments Needs bolts to secure well

Recommendations

Well needs to be redeveloped	No
Well needs to be re-surveyed.	No
Well needs to be repaired.	No
Well needs to be replaced.	No
Well needs to be properly abandoned.	No
No action necessary.	No

Comments

Well needs internal cap

Inspected by: ______
Date of Inspection: 10/26/2011
Reviewed by: ______ **(Print)**
______ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 2500068851
Well Tag ID: MW-125S
Well Installation date: 7/24/07

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	622634	
Easting (State Plane)	470107	

Cross streets (if applicable): ______

GPS Instrument used: ______
Datum: ______
Accuracy/Precision: ______

Well Construction Details

Type of well (Circle one)	Flush Mount	
Well lock\security type:	Pad lock	
Elevation (top of inner casing):		
Surface casing material:	Steel	
Well casing material:	Stainless Steel	
Surface Casing diameter:	8	*inches*
Well Diameter:	4	*inches*
Well Depth (as installed):	21.00	*ftbgs*
Well Depth (as measured):	20.91	*fttic*
Screened interval:		*ft*
Open hole interval:	-	*ft*
Depth to water:	10.53	*ftbtic*
Date:	10/26/2011	*Time: 12:00*

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable		0	*ppm*
Multi-gas/CGI meter Readings taken (if applicable):			
	LEL:	0	*% LEL*
	O_2:	20.9	*40% Vol.*
	CO:	0	*ppm*
	H_2S:	0	*ppm*
Do readings indicate unsafe conditions exist?			No

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?	Yes	
Is measuring point marked?		No
Is the well clearly labeled?	Yes	
Flush mount - Is it secure from runoff?		No

Other Comments ______________________________

____

Recommendations

Well needs to be redeveloped		No
Well needs to be re-surveyed.		No
Well needs to be repaired.		No
Well needs to be replaced.		No
Well needs to be properly abandoned.		No
No action necessary.	Yes	

Comments

Inspected by: ______________________________

Date of Inspection: ______________________________

Reviewed by: ______________________________ **(Print)**

______________________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 2500068852
Well Tag ID: MW-125I
Well Installation date: 8/24/07

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	622638	
Easting (State Plane)	470119	

Cross streets (if applicable):

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one)	Flush Mount	
Well lock\security type:	Master Lock	
Elevation (top of inner casing):	-	
Surface casing material:	Cast Iron	
Well casing material:	Stainless	
Surface Casing diameter:	8	*inches*
Well Diameter:	4	*inches*
Well Depth (as installed):	58	*ftbgs*
Well Depth (as measured):	57.82	*fttic*
Screened interval:	48-58	*ft*
Open hole interval:	-	*ft*
Depth to water:	11.80	*ftbtic*
Date:	10/26/2011	*Time:* 12:00

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	0	*% LEL*
O_2:	20.9	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

	Yes	No
Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?	Yes	
Is measuring point marked?		No
Is the well clearly labeled?	Yes	
Flush mount - Is it secure from runoff?		No

Other Comments ______________________________

Recommendations

Well needs to be redeveloped	
Well needs to be re-surveyed.	
Well needs to be repaired.	
Well needs to be replaced.	
Well needs to be properly abandoned.	
No action necessary.	Yes

Comments

Inspected by: ______________________________

Date of Inspection: ______________________________

Reviewed by: ______________________________ **(Print)**

______________________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 2500068849
Well Tag ID: MW-126S
Well Installation date: 7/20/07

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	622434	
Easting (State Plane)	469695	

Cross streets (if applicable): ____

GPS Instrument used: ____
Datum: ____
Accuracy/Precision: ____

Well Construction Details

Type of well (Circle one) Flush Mount Stick Up Multilevel Well*
Well lock\security type: ____
Elevation (top of inner casing): ____
Surface casing material: ____
Well casing material: ____
Surface Casing diameter: ____ *inches*
Well Diameter: ____ *inches*
Well Depth (as installed): ____ *ftbgs*
Well Depth (as measured): ____ *fttic*
Screened interval: ____ *ft*
Open hole interval: ____ *ft*
Depth to water: ____ *ftbtic*
Date: ____ *Time:* ____

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: ______________ *% LEL*
O_2: ______________ *40% Vol.*
CO: ______________ *ppm*
H_2S: ______________ *ppm*

Do readings indicate unsafe conditions exist?	Yes	No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Other Comments ____

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Inspected by: ______________________________
Date of Inspection: ______________________________
Reviewed by: ______________________________ **(Print)**
______________________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 2500068856
Well Tag ID: MW-127S
Well Installation date: 7/18/07

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	621829	
Easting (State Plane)	468405	

Cross streets (if applicable): Weiss and Gladys

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one) Flush Mount
Well lock\security type: MasterLock (Key lock)
Elevation (top of inner casing):
Surface casing material: Cast Iron
Well casing material: Stainless Steel
Surface Casing diameter: 9 *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): 35.5 *ftbgs*
Well Depth (as measured): 35.05 *fttic*
Screened interval: 20.5-35.5 *ft*
Open hole interval: *ft*
Depth to water: 22.82 *ftbtic*
Date: 10/25/2011 *Time: 9:30*

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	0	*% LEL*
O_2:	18.4	*40% Vol.*
CO:	1	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist? Yes

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		
Is measuring point marked?		No
Is the well clearly labeled?	Yes	
Flush mount - Is it secure from runoff?		No

Other Comments ____

Recommendations

Well needs to be redeveloped	
Well needs to be re-surveyed.	
Well needs to be repaired.	
Well needs to be replaced.	
Well needs to be properly abandoned.	
No action necessary.	Yes

Comments

Inspected by: ____________________

Date of Inspection: ____________________

Reviewed by: ____________________ **(Print)**

____________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 2500068856
Well Tag ID: MW-127S
Well Installation date: 7/18/07

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	621829	
Easting (State Plane)	468405	

Cross streets (if applicable): ______ Weiss and Gladys

GPS Instrument used: ______
Datum: ______
Accuracy/Precision: ______

Well Construction Details

Type of well (Circle one)	Flush Mount	
Well lock\security type:	MasterLock	
Elevation (top of inner casing):	-	
Surface casing material:	Cast Iron	
Well casing material:	Stainless Steel	
Surface Casing diameter:	9	*inches*
Well Diameter:	4	*inches*
Well Depth (as installed):	35.5	*ftbgs*
Well Depth (as measured):	35.93	*fttic*
Screened interval:	20.5-35.5	*ft*
Open hole interval:	-	*ft*
Depth to water:	22.75	*ftbtic*
Date:	10/26/2011	*Time: 11:33*

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	0	*% LEL*
O_2:	20.9	*40% Vol.*
CO:	0	*ppm*
H_2S:	0	*ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

Is the concrete pad in good condition?	Yes	
Is the well surface casing in good condition?	Yes	
Is the surface casing vertical?	Yes	
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		No
Is measuring point marked?		No
Is the well clearly labeled?	Yes	
Flush mount - Is it secure from runoff?		No

Other Comments ______________________________

Recommendations

Well needs to be redeveloped	
Well needs to be re-surveyed.	
Well needs to be repaired.	
Well needs to be replaced.	
Well needs to be properly abandoned.	
No action necessary.	Yes

Comments

Inspected by: ______________________________

Date of Inspection: ______________________________

Reviewed by: ______________________________ **(Print)**

______________________________ **(Sign)**

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Federal Creosote
Site Address: Manville
Site County: Somerset
Site State: New Jersey
EPA Site ID Number: NJ0001900281
Site Owner: EPA
EPA Project Manager: Rich Puvogel

Well Locational Information

State Well ID: 25-54570
Well Tag ID: T-1
Well Installation date: 7/8/99

	From Log	*By GPS*
Ground Surface Elevation		
Latitude		
Longitude		
Northing (State Plane)	622948.86	
Easting (State Plane)	469992.35	

Cross streets (if applicable): NA

GPS Instrument used:
Datum:
Accuracy/Precision:

Well Construction Details

Type of well (Circle one) Stick up
Well lock\security type: None
Elevation (top of inner casing):
Surface casing material: Iron
Well casing material: S. Steel
Surface Casing diameter: 10 *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): 112.2 *ftbgs*
Well Depth (as measured): 115.47 *fttic*
Screened interval: *ft*
Open hole interval: *ft*
Depth to water: 13.09 *ftbtic*
Date: 10/12/2011 *Time: 11:50*

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable 0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL:	______	*% LEL*
O_2:	______	*40% Vol.*
CO:	______	*ppm*
H_2S:	______	*ppm*

Do readings indicate unsafe conditions exist? No

Well Condition

Is the concrete pad in good condition?		
Is the well surface casing in good condition?		
Is the surface casing vertical?		
Is there an internal well seal?	Yes	
Has there been physical damage to the well?		No
Does sounding depth match completed depth?		
Is measuring point marked?		No
Is the well clearly labeled?		No
Flush mount - Is it secure from runoff?	Yes	

Other Comments No padlock

Recommendations

Well needs to be redeveloped	
Well needs to be re-surveyed.	
Well needs to be repaired.	Yes
Well needs to be replaced.	
Well needs to be properly abandoned.	
No action necessary.	

Comments

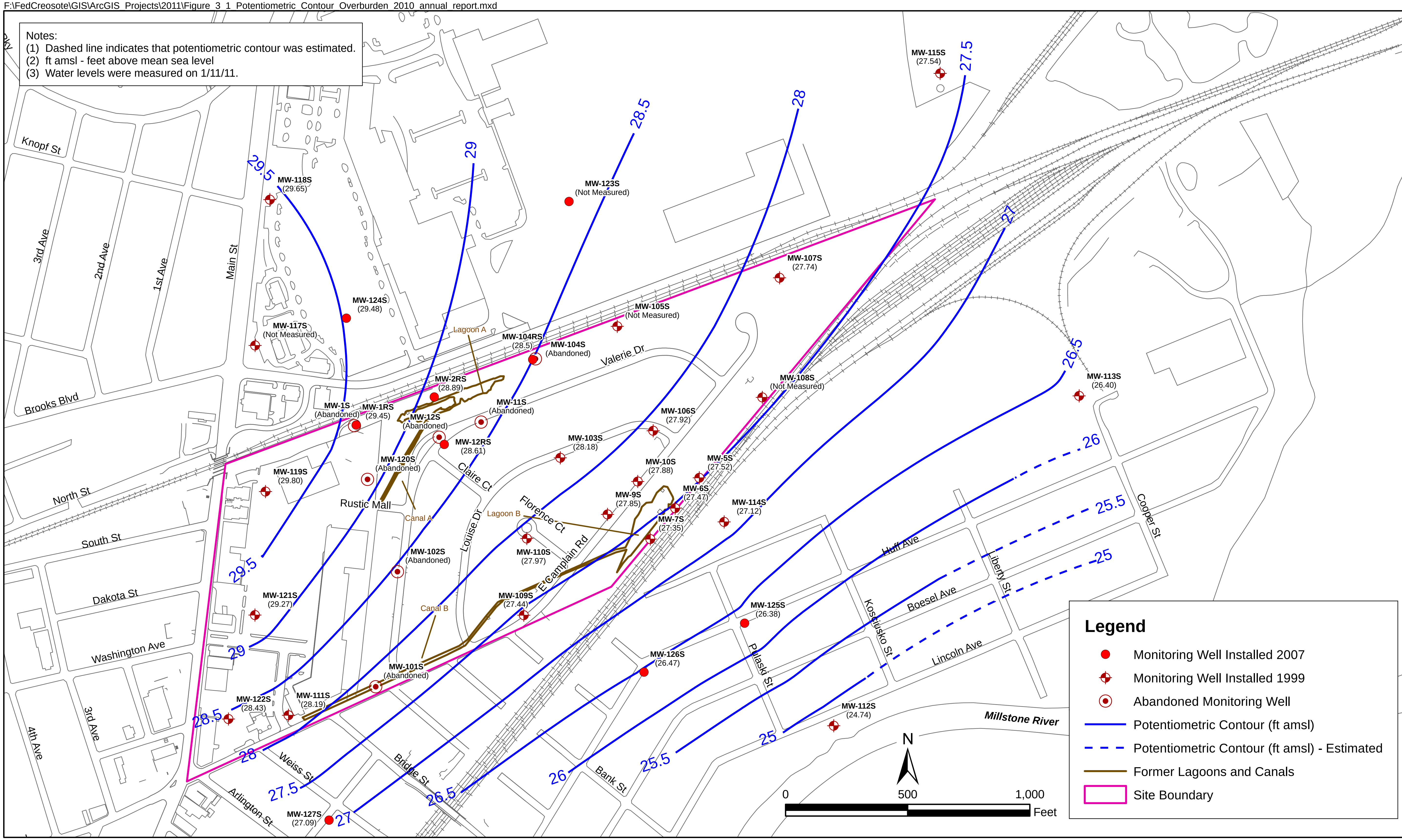
Requires padlock assembly (welding)

Inspected by: T. Horn
Date of Inspection: 10/11/2011
Reviewed by: ______ **(Print)**
______ **(Sign)**

Appendix C

January 2011 Potentiometric Surfaces

F:\FedCreosote\GIS\ArcGIS_Projects\2011\Figure_3_1_Potentiometric_Contour_Overburden_2010_annual_report.mxd

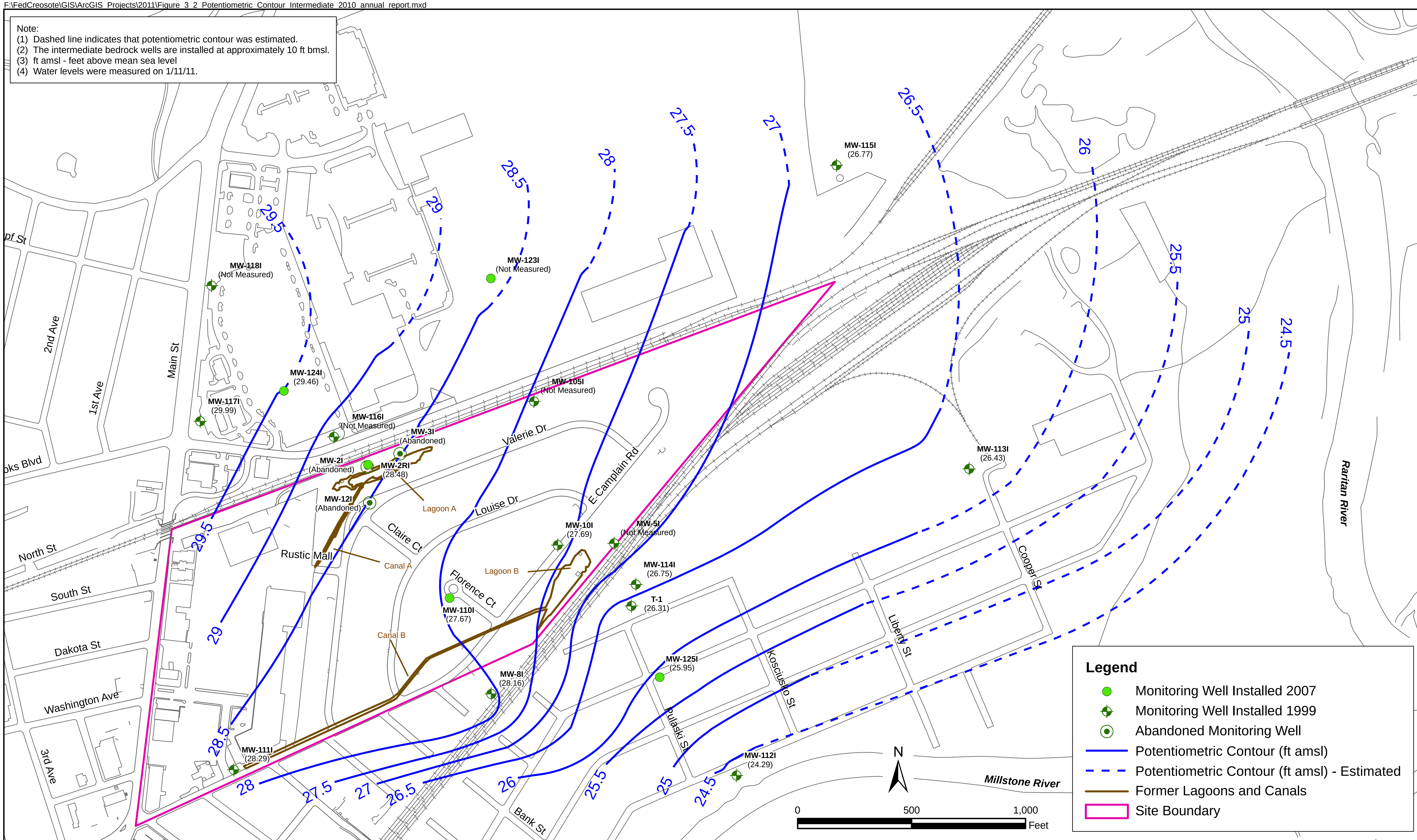


CDM

Federal Creosote Superfund Site
Manville, New Jersey

Figure 3-1
Potentiometric Contour Map
Overburden - January 2011

F:\FedCreosote\GIS\ArcGIS_Projects\2011\Figure_3_2_Potentiometric_Contour_Intermediate_2010_annual_report.mxd

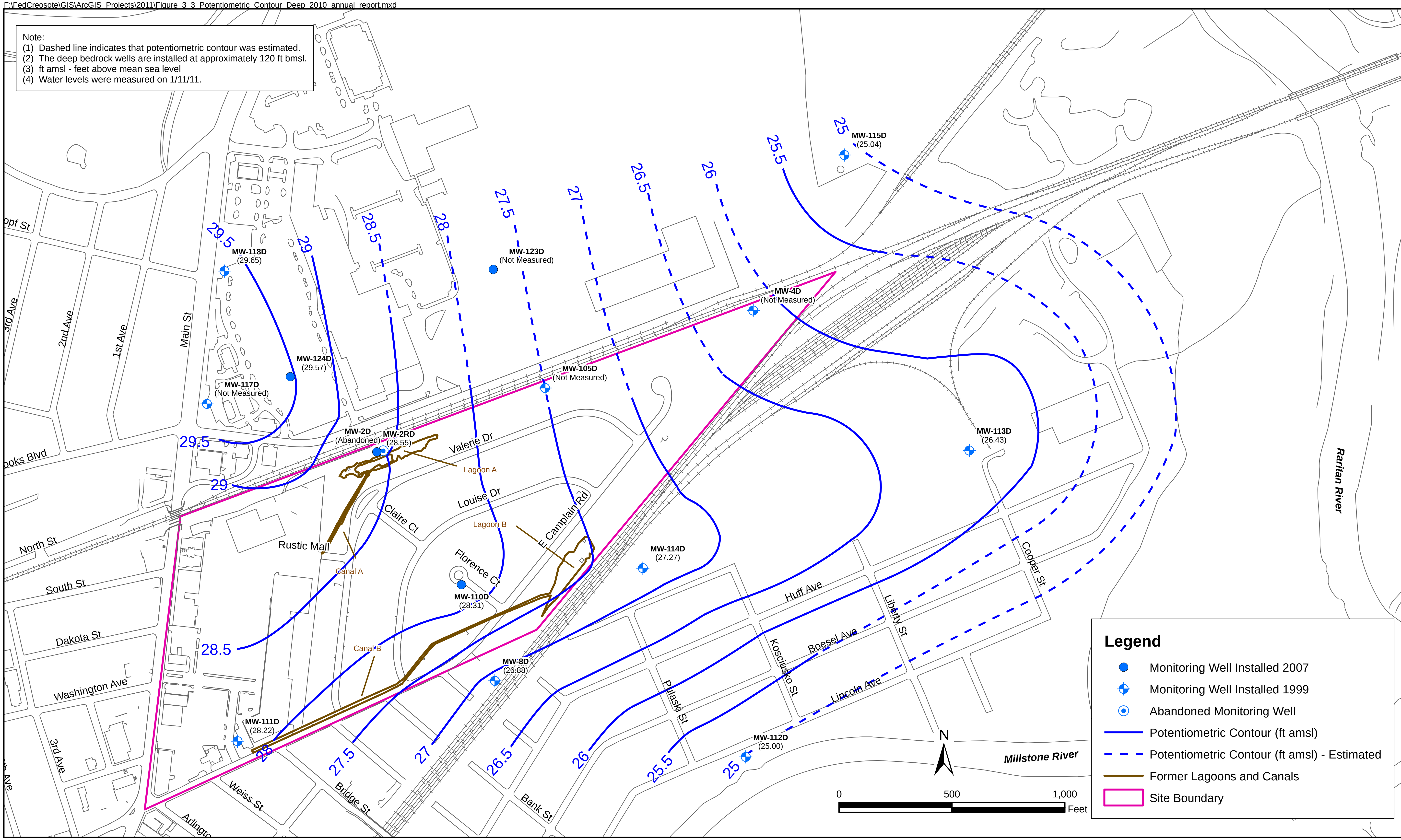


CDM

Federal Creosote Superfund Site
Manville, New Jersey

Figure 3-2
Potentiometric Contour Map
Intermediate Bedrock - January 2011

F:\FedCreosote\GIS\ArcGIS_Projects\2011\Figure_3_3_Potentiometric_Contour_Deep_2010_annual_report.mxd



CDM

Federal Creosote Superfund Site
Manville, New Jersey

Figure 3-3
Potentiometric Contour Map
Deep Bedrock - January 2011

Appendix D

Low-Flow Groundwater Sampling Sheets

Initial DTW: 10.56
Bottom: 21.90

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10/17/2011
SAMPLERS: AE
WEATHER CONDITIONS: 60°F Sunny
SAMPLE ID: MW-1145-47
CLP ID: B9QP8

WELL #: MW-1145
DEPTH OF PUMP INTAKE: 13.90 ft TIC or ft BGS (circle one)
SCREENED/OPEN BOREHOLE INTERVAL: 6.6 – 19.6 ft TIC or ft BGS (circle one)
SAMPLE TIME: 12:10 **SAMPLE FLOW RATE:** 320 ml/minute

Instrument Type/Model: Complete and/or Circle at right
YSI Model # 600 XL / Horiba U-22 (circle one)
Other (specify) Lamotte 2020e
Instrument:

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: mL/min	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
11:40		10.50	320							
11:45		10.51	320	[illegible]	6.41	.626	8.47	14.59	191.2	1.78
11:50		10.54	320	-.03	6.41	.625	8.15	14.82	182.6	1.16
11:55		10.56	320	-.02	6.41	.624	7.44	15.14	166.9	1.37
12:00		10.53	320	+.03	6.43	.621	7.12	15.34	161.3	.87
12:05		10.51	320	+.02	6.42	.621	6.75	15.63	158.8	.68
12:10	7gal Sample									

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

DTW 10.74
DTB 57.5

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10/18/2011 **WELL #:** MW 125 I

SAMPLERS: AE **DEPTH OF PUMP INTAKE:** 53 ft TIC or ft BGS (circle one)

WEATHER CONDITIONS: 60°F Cloudy slight breeze **SCREENED/OPEN BOREHOLE INTERVAL:** 48 - 58 ft TIC or ft BGS (circle one)

SAMPLE ID: MW-125I-47 **SAMPLE TIME:** 1030 **SAMPLE FLOW RATE:** 300 ml/minute
CLP ID: B9QQ6

Instrument Type/Model: Complete and/or Circle at right YSI Model # 600 XLM ~~Horiba U-22~~ (circle one) Other (specify) Lamotte 2020e **Instrument:**

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: mL/min	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
9:50		11.28	300		6.85	.556	2.04	14.80	210.9	2.92
9:55		11.39	300	-.11	7.90	.586	1.11	15.66	195.6	1.60
10:00		11.39	300	0	7.07	.580	.94	15.91	187.6	1.21
10:05		11.39	300	0	7.09	.570	.83	16.00	182.3	1.14
10:10		11.40	300	-.01	7.09	.576	.73	16.06	177.7	.83
10:15		11.42	300	-.02	7.07	.581	.69	16.00	174.2	.78
10:20	3 gal	11.43	300	-.01	7.09	.584	.67	16.04	170.4	.69
10:30	Sample									

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10-17-2011
WELL #: MW-114 I

SAMPLERS: Z. Swarchy
DEPTH OF PUMP INTAKE: ft TIC or ft BGS (circle one)

WEATHER CONDITIONS: Sunny 65°F
SCREENED/OPEN BOREHOLE INTERVAL: ft TIC or ft BGS (circle one)

SAMPLE ID: MW-114I-Y7 **SAMPLE TIME:** 1310 **SAMPLE FLOW RATE:** 200 **ml/minute**

CLP ID: B9QP7

Instrument Type/Model: Complete and/or Circle at right YSI Model # 650 MDS / Horiba U-22 (circle one) Other (specify) Lamotte 2020e **Instrument:**

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: ml/min	ft TIC / ft BGS (circle one)	SU	S/cm / mS/cm / or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
1220		10.94	150		8.08	.810	5.11	14.86	-4.9	1.25
1230		11.08	200		8.04	.831	1.99	15.16	-25.7	1.31
1235		11.08	200		7.96	.834	2.07	14.94	-26.4	1.47
1240		11.09	200		7.91	.832	1.74	14.90	-34.8	0.78
1245		11.03	200		7.91	.833	1.71	14.86	-37.4	0.09
1250		11.04	200		7.90	.832	1.56	14.87	~~-31.3~~ -41.2	0.41
1255		11.03	200		7.89	.830	1.35	14.88	-42.3	0.26
1300		11.05	200		7.91	.829	1.19	14.89	-44.2	0.19
1305	4	11.05	200		7.91	.829	1.13	14.87	-45.2	0.15
1310		11.04	200		7.91	.828	1.01	14.86	-46.7	0.22

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10-18-11
WELL #: MW-124S

SAMPLERS: Z. Swanchy
DEPTH OF PUMP INTAKE: 26' ft TIC or ft BGS (circle one)

WEATHER CONDITIONS: Sunny, ≈ 65°F
SCREENED/OPEN BOREHOLE INTERVAL: 18 - 33 ft TIC or ft BGS (circle one)

SAMPLE ID: MW-124S-Y7 **SAMPLE TIME:** 1135 **SAMPLE FLOW RATE:** 200 **ml/minute**
CLP ID: B9QQ5

Instrument Type/Model:
Complete and/or Circle at right
YSI Model # 650 MDS **/ Horiba U-22** **(circle one)**
Other (specify) Lamotte 2020e
Instrument:

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: ml/min	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm°/ or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
1055		15.20	200		6.44	5.745	3.86	19.22	113.5	119
1100		15.18	200	.02	6.19	5.799	2.24	19.98	115.0	117
1105	1	15.18	200	0.0	6.09	5.844	3.06	20.83	114.4	106.4
1110		15.18	200	0.0	6.02	5.853	3.00	21.52	113.7	92.9
1115		15.18	200	0.0	6.00	5.986	1.93	21.57	111.8	88.8
1120	2	15.18	200	0.0	6.00	5.968	2.21	21.62	109.3	78.9
1125		15.18	200	0.0	5.99	5.949	1.86	21.78	107.1	74.2
1130	3	15.18	200	0.0	5.99	5.932	1.73	21.69	106.1	74.2
1135	Sampled									

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

DTW 10.40
DTB 20.93

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10/18/2011

WELL #: MW-125S

SAMPLERS: AE

DEPTH OF PUMP INTAKE: 135' ft TIC or ft BGS (circle one)

WEATHER CONDITIONS: Clear 65° Slight Breeze

SCREENED/OPEN BOREHOLE INTERVAL: 106'-121' ft TIC or ft BGS (circle one)

SAMPLE ID: MW-125S-97

SAMPLE TIME: 12:50 SAMPLE FLOW RATE: 300 ml/minute

CLP ID: B9QQ7

Instrument Type/Model: Complete and/or Circle at right

YSI Model # 600XLM / Horiba U-22 (circle one)
Other (specify) Lamotte 2020e

Instrument:

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: mL/min	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm° or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
~~10~~ 12:05		10.35	340							
12:10		10.35	340	0	6.15	.348	6.46	19.89	172.3	24.5
12:15		10.41	300	-.06	5.92	.347	6.14	20.74	174.5	17.8
12:20		10.37	300	+.04	5.88	.348	6.32	20.47	170.3	15.9
12:25		10.37	300	0	5.84	.348	6.56	20.19	165.9	14.2
12:30		10.35	300	+.02	5.72	.347	6.40	20.62	166.4	10.38
12:35		10.33	300	+.02	5.83	.346	6.26	20.92	159.4	11.30
12:40	6 gal	10.36	300	-.03	5.71	.345	6.19	20.16	155.1	11.50
12:50	Sample									

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10/18/11
WELL #: MW-116I
SAMPLERS: Z. Swarchy
DEPTH OF PUMP INTAKE: 66 ft TIC or ft BGS (circle one)
WEATHER CONDITIONS: Sunny 70°F
SCREENED/OPEN BOREHOLE INTERVAL: 61.3 → 71.3 ft TIC or ft BGS (circle one)
SAMPLE ID: MW-116I-47
SAMPLE TIME: 1520
SAMPLE FLOW RATE: 200 ml/minute
CLP ID: B9QQ9

Instrument Type/Model:
Complete and/or Circle at right
YSI Model # 650 MDS / Horiba U-22 (circle one)
Other (specify) Lamotte 2020e
Instrument:

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: mL/min	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm, or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
1445		17.28	200		7.29	1.392	1.18	14.84	-177.4	2.11
1450		17.26	200		7.19	1.433	0.85	14.66	-177.7	0.92
1455		17.18	~~150~~ ~~200~~		7.20	1.468	0.91	15.19	-164.0	1.34
1500		17.18	200		7.21	1.490	0.76	15.43	-165.9	0.99
1505		17.18	200		7.21	1.496	0.53	15.27	-167.3	1.80
1510		17.18	200		7.23	1.493	0.47	15.31	-168.8	1.90
1515	2.5	17.18	200	0.17	7.23	1.490	0.48	15.45	-170.4	0.70
1520	Sampled			(17.01 original DTW)						

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L; Redox Potential = -100 - +600 mV; Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing; BGS = Below Ground Surface

DTW: 8.07
DTB: 28.40
PID: 0.0

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10/19/2011 **WELL #:** MW-126S

SAMPLERS: AE **DEPTH OF PUMP INTAKE:** 21 **ft TIC or ft BGS (circle one)**

WEATHER CONDITIONS: Rain 65°F **SCREENED/OPEN BOREHOLE INTERVAL:** 13.5-28.5 **ft TIC or ft BGS (circle one)**

SAMPLE ID: MW-126S-47 **SAMPLE TIME:** 10:50 **SAMPLE FLOW RATE:** 360 **ml/minute**

CLP ID: B9QQ8

Instrument Type/Model: Complete and/or Circle at right **YSI Model #** 600XLM ~~/ Horiba U-22 (circle one)~~ **Other (specify)** Pine #9003 **Instrument:**

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: ml/min	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm / or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
10:10	Start	8.10	360							
10:15		8.10	360	0	5.60	.392	6.79	18.70	275.6	48.6
10:20		8.10	360	0	5.60	.393	6.68	19.28	277.0	41.9
10:25		8.12	360	-.02	5.60	.392	6.60	19.55	277.9	31.5
10:30		8.12	360	0	5.60	.391	6.53	19.65	279.9	28.3
10:35		8.13	360	-.01	5.60	.390	6.55	19.68	280.8	22.6
10:40	2.52	8.13	360	0	5.60	.392	6.53	19.72	280.1	20.5
10:50	Sample									

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10-19-11
SAMPLERS: Z. Swavely
WEATHER CONDITIONS: Rain ≈ 60°F
SAMPLE ID: MW-111D-Y7
CLP ID: B9QP3

WELL #: MW-111D
DEPTH OF PUMP INTAKE: 188' **ft TIC or ft BGS (circle one)**
SCREENED/OPEN BOREHOLE INTERVAL: 182'-192' **ft TIC or ft BGS (circle one)**
SAMPLE TIME: 1130 **SAMPLE FLOW RATE:** ≈ 200 **ml/minute**

Instrument Type/Model:
Complete and/or Circle at right
YSI Model # 650 MDS **/ Horiba U-22 (circle one)**
Other (specify) Lamotte 2020e
Instrument:

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: mL/min	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm, or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
1055		21.22	300	0	8.69	0.817	7.23	16.46	106.5	3.05
1100		21.22	300	0	8.37	0.818	6.22	16.70	106.8	—
1110	≈1	21.22	300	0	9.04	0.820	5.48	16.91	105.2	4.95
1115		21.22	300	0	9.11	0.821	5.11	16.84	103.7	4.64
1120	≈2	21.22	300	0	9.15	0.821	4.84	16.80	102.5	4.67
1125	≈2.5	21.22	300	0	9.20	0.821	4.39	16.84	100.6	4.43
1130	Sampled									

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L; Redox Potential = -100 - +600 mV; Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

PID = 1.0 ppm

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10-20-11 **WELL #:** MW-110D

SAMPLERS: Z. Swarely **DEPTH OF PUMP INTAKE:** 190 **ft TIC or ft BGS (circle one)**

WEATHER CONDITIONS: Partly Sunny, 65°F forecast high, windy **SCREENED/OPEN BOREHOLE INTERVAL:** 182-192 **ft TIC or ft BGS (circle one)**

SAMPLE ID: MW-110D-Y7 **SAMPLE TIME:** 1100 **SAMPLE FLOW RATE:** 200 **ml/minute**
CLP ID: B9QP0

Initial DTW = 17.23'

Instrument Type/Model: Complete and/or Circle at right **YSI Model #** 650 MDS **/ Horiba U-22 (circle one)** **Other (specify)** Lamotte 2020e **Instrument:**

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: ml/min	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm°/ or µS/cm (circle one)	mg/L (**not %**)	Units: °C	mV	NTUs
1015		17.29'	200	0	7.15	1.352	9.60	15.89	222.8	0.0
1020		17.30'	200	0	7.12	2.381	5.85	17.50	210.9	0.44
1025		17.29'	200	0	6.99	2.625	2.96	17.46	114.3	0.72
1030		17.29'	200	0	6.97	2.665	2.47	17.34	60.0	0.89
1035	1	17.29	200	0	6.96	2.665	1.94	17.15	43.2	1.08
1040		17.29	200	0	6.96	2.683	1.78	17.28	33.2	1.25
1045	2	17.29	200	0	6.96	2.697	1.79	17.12	29.2	1.33
1050		17.29	200	0	6.96	2.688	1.42	17.46	23.1	1.62
1055	3	17.29	200	0	6.96	2.698	1.18	17.20	19.9	1.00
1100	Sampled									

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

DTW: 16.06
DTB: 31.97
PID: 0.9

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10/20/2011

WELL #: MW-123S

SAMPLERS: AE

DEPTH OF PUMP INTAKE: 24.5 ft TIC or ft BGS (circle one)

WEATHER CONDITIONS: Partly Cloudy. 65°F Wind 10-15mph

SCREENED/OPEN BOREHOLE INTERVAL: 17-32 ft TIC or ft BGS (circle one)

SAMPLE ID: MW-123S-47

SAMPLE TIME: 14:25 SAMPLE FLOW RATE: 300 ml/minute

CLP ID: B9Q~~0~~2

Instrument Type/Model: Complete and/or Circle at right

YSI Model # 600 XL ~~Horiba U-22~~ (circle one)

Other (specify) Pine # 3178

Instrument:

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: mL/min	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm° / or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
13:25		16.12	320		7.07	2.732	5.66	19.28	51.1	139
13:30		16.12	320	0	6.72	2.845	5.31	20.14	58.4	99.5
13:35		16.11	320	+.01	6.57	2.852	3.89	20.46	64.7	72.8
13:40		16.11	320	0	6.52	2.845	3.94	20.77	69.9	59.1
13:45		16.12	320	-.01	6.48	2.845	3.83	20.91	73.7	49.0
AE 13:50		16.11	320	+.01	6.44	2.842	3.94	21.14	76.3	44.7
13:55		16.11	320	0	6.42	2.836	3.43	20.65	79.4	40.7
1400		16.13	320	-.02	6.40	2.830	3.49	20.33	83.0	37.0
1405		16.14	320	-.01	6.40	2.828	3.33	20.19	81.5	31.0
1410	8 gal	16.14	320	0	6.37	2.825	3.46	20.11	82.9	21.7

1425 sample

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

DTW: 17.40 TIC
DTB: 69.85 TIC
PID: 1.0

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10/20/2014
SAMPLERS: AE
WEATHER CONDITIONS: Partly cloudy 70°F
SAMPLE ID: MW-110I-47
CLP ID: B9QP1

WELL #: MW-110 I
DEPTH OF PUMP INTAKE: 65 ft TIC or ft BGS (circle one)
SCREENED/OPEN BOREHOLE INTERVAL: ~~55-65~~ AE 60-70 ft TIC or ft BGS (circle one)
SAMPLE TIME: 1040 **SAMPLE FLOW RATE:** 300 ml/minute TOTAL PURGED 5-GALS.

Instrument Type/Model:
Complete and/or Circle at right
YSI Model # 3178 ~~/Horiba U-22~~ (circle one)
Other (specify) model 600 XL

Instrument:

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: mL/min	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm^c/ or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
1000	start pump	17.40	370							
1010		17.48	370	-.08	7.50	.921	2.13	16.60	138.1	1.03
1015	1.05	17.48	310	0	7.41	.961	1.74	16.36	77.1	1.70
1020		17.48	310	0	7.43	.961	1.73	16.43	44.7	3.70
1025		17.48	310	0	7.43	.962	1.74	16.96	40.0	4.22
1030	1.98	17.49	310	-.01	7.37	.963	1.60	17.17	41.1	4.47
10:40	Sample									

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L; Redox Potential = -100 - +600 mV; Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10-20-11

SAMPLERS: Z. Swavely

WEATHER CONDITIONS: Windy, Partly cloudy, 65°F

SAMPLE ID: MW-123I-47

CLP ID: B9QQ1

SAMPLE TIME: 1425

WELL #: MW-123I

DEPTH OF PUMP INTAKE: 55 ft TIC or ft BGS (circle one)

SCREENED/OPEN BOREHOLE INTERVAL: 50-60 ft TIC or ft BGS (circle one)

SAMPLE FLOW RATE: 125 ml/minute

Initial DTW = 16.06'

Instrument Type/Model: Complete and/or Circle at right

YSI Model # 650 MDS / Horiba U-22 (circle one)
Other (specify) Lamotte 2020e

Instrument:

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: mL/min	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm° or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
1335		16.60	150		8.00	1.068	7.08	19.19	108.1	9.16
1340		16.78	150		7.96	1.283	4.37	19.49	125.3	8.81
1345		16.80	150		7.99	1.308	4.10	19.69	127.9	8.62
1350		16.85	150		7.94	1.321	3.24	19.77	136.6	8.41
1355	1	16.80	125		7.91	1.316	2.88	20.07	125.8	7.68
1400		16.76	125		7.83	1.313	2.64	20.31	126.4	6.81
1405		16.75	125		7.80	1.295	2.35	20.14	128.7	6.48
1410	2	16.75	125		7.79	1.288	2.22	19.75	125.7	5.81
1415		16.75	125		7.69	1.283	2.16	19.73	126.5	5.52
1420		16.75	125		7.68	1.285	2.04	19.42	122.5	6.74

1425 Sampled

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L; Redox Potential = -100 - +600 mV; Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

1of2

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

Creosote odor

DATE: 10-21-11 **WELL #:** MW-2RI

SAMPLERS: Z. Swavely **DEPTH OF PUMP INTAKE:** 70 **ft TIC or ft BGS (circle one)**

WEATHER CONDITIONS: Sunny, wind, 55°F **SCREENED/OPEN BOREHOLE INTERVAL:** 64-74 **ft TIC or ft BGS (circle one)**

SAMPLE ID: MW-2RI-Y7 **SAMPLE TIME:** 0955 **SAMPLE FLOW RATE:** 300 **ml/minute**

CLP ID: B9QR3

Initial DTW = 17.20'

Instrument Type/Model: Complete and/or Circle at right | **YSI Model #** 650 MDS **/ Horiba U-22 (circle one)** **Other (specify)** Lamotte 2020e | **Instrument:**

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: mL/min	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm / or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
0850		17.20	200	0	6.76	0.215	14.48	13.81	178.7	31.7
0855		17.20	200		6.86	0.739	6.50	14.59	104.4	22.1
0900		17.20	200		7.05	0.846	5.33	14.80	-1.5	18.0
0905	1	17.20	200		7.17	0.930	4.43	14.76	-40.3	12.9
0910		17.20	200		7.24	0.972	4.00	14.92	-54.1	10.05
0915		17.20	200		7.29	0.991	3.55	14.98	-68.5	8.09
0920	2.5	17.20	200		7.31	1.004	3.11	14.86	-88.5	7.16
0925		17.20			7.33	1.007	2.94	15.14	-98.4	6.71
0930		17.20	300		7.34	1.020	2.45	15.52	-101.9	—
0935	3	17.20	200		7.34	1.025	2.36	15.51	-105.1	8.22

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10-21-11

WELL #: MW-2RI

SAMPLERS: Z. Swardy

DEPTH OF PUMP INTAKE: 70 ft TIC or ft BGS (circle one)

WEATHER CONDITIONS: Sunny, wind, 55°F

SCREENED/OPEN BOREHOLE INTERVAL: 64-74 ft TIC or ft BGS (circle one)

SAMPLE ID: MW-2RI-47
CLP ID: B9QR3

SAMPLE TIME: 0955 **SAMPLE FLOW RATE:** 300 ml/minute

Instrument Type/Model:
Complete and/or Circle at right

YSI Model # 650 MDS / Horiba U-22 (circle one)
Other (specify) Lamotte 2020e

Instrument:

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: ml/min	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm°/ or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
0940	3.5	17.20	200	0	7.34	1.028	2.19	1551	-103.3	8.43
0945		17.20	200	0	7.35	1.032	2.06	1558	-101.6	10.68
0950	4	17.20	200	0	7.36	1.036	1.97	1566	-106.2	9.10
0955	Sampled									

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

PTW: 16.50ft
DTB: 32.09ft
PID: 0

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10/20/2011

WELL #: MW-2RS

SAMPLERS: AE

DEPTH OF PUMP INTAKE: 24.5 ft TIC or ft BGS (circle one)

WEATHER CONDITIONS: 50°F, Partly cloudy, wind 10mph

SCREENED/OPEN BOREHOLE INTERVAL: 17-32 ~~ft TIC~~ or ft BGS (circle one)

SAMPLE ID: MW-2RS-47, MW-602S-47 SAMPLE TIME: 930 SAMPLE FLOW RATE: 280 ~~ml/minute~~
CLP ID: MB9QR4, MB9QR6

Instrument Type/Model: Complete and/or Circle at right

YSI Model # 600 XL / ~~Horiba U-22~~ (circle one)
Other (specify) Pine # 2132

Instrument:

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE ~~ft~~	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / ~~liters~~ (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: mL/min	~~ft~~ TIC / ft BGS (circle one)	SU	S/cm, mS/cm or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
8:50		16.50	280		6.36	1.037	2.50	13.40	-99.9	4.21
8:55		16.64	280	-.14	6.37	1.021	1.05	13.96	-93.4	3.49
9:00		16.55	280	+.09	6.37	1.017	.51	13.91	-89.1	3.34
9:05		16.55	280	0	6.36	.996	.28	13.87	-87.6	2.97
9:10		16.55	280	0	6.37	.997	.23	14.30	-89.9	3.15
9:15		16.55	280	0	6.37	.994	.16	14.59	-92.5	2.89
9:20		16.55	280	0	6.36	.996	.12	14.91	-91.7	2.89
9:30	Sample									
~~9:45~~ 930	Duplicate Sample									
AE	7gal									

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

1 of 2

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10-24-11 **WELL #:** MW-104RS

SAMPLERS: Z. Swavely **DEPTH OF PUMP INTAKE:** 25' ft TIC or ft BGS (circle one)

WEATHER CONDITIONS: Sunny, 60°F **SCREENED/OPEN BOREHOLE INTERVAL:** 15.5 - 30.5 ft TIC or ft BGS (circle one)

SAMPLE ID: MW-104RS-Y7 **SAMPLE TIME:** 1125 **SAMPLE FLOW RATE:** 150 ml/minute

CLP ID: MB9QN9

Total Depth 31.5 (table)
Initial DTW = 14.75'

Instrument Type/Model: Complete and/or Circle at right — YSI Model # 650 MDS / Horiba U-22 (circle one) Other (specify) Lamotte 2020e — **Instrument:**

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: mL/min	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm / or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
1020		14.95	200	.2	6.24	1.054	2.20	13.95	-10.8	102.9
1025		14.90	~~150~~ 100	.15	6.64	1.078	1.91	14.43	-70.1	92.2
1030		14.90	~~150~~	.15	6.66	1.080	1.80	14.72	-66.7	60.1
1035		14.90	~~150~~	.15	6.67	1.078	1.68	15.09	-64.4	47.5
1040		14.90	~~150~~	.15	6.68	1.072	1.46	15.42	-58.7	37.9
1045		14.90	~~150~~	.15	6.67	1.070	1.29	15.49	-49.5	34.3
1050		14.90	~~150~~	.15	6.67	1.070	1.23	15.65	-48.1	32.7
1055	1	14.90	100	.15	6.67	1.069	1.14	15.62	-45.4	30.0
1100		14.92	150	.17	6.67	1.069	1.09	16.06	-44.3	27.5
1105		14.93	150	.18	6.66	1.072	0.93	16.15	-41.6	32.6

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10-24-11
SAMPLERS: Z. Swardy
WEATHER CONDITIONS: Sunny 60°F
SAMPLE ID: MW-104RS-Y7
CLP ID: MB9QN9

WELL #: MW-104RS
DEPTH OF PUMP INTAKE: 25' **ft TIC or ft BGS (circle one)**
SCREENED/OPEN BOREHOLE INTERVAL: 15.5-30.5 **ft TIC or ft BGS (circle one)**
SAMPLE TIME: 1125 **SAMPLE FLOW RATE:** 150 **ml/minute**

Instrument Type/Model:
Complete and/or Circle at right

YSI Model # 650 MDS **/ Horiba U-22 (circle one)**
Other (specify) Lamotte 2020e

Instrument:

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: mL/min	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm / or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
1110		14.93	150	.18	6.66	1.073	0.86	16.05	-42.2	28.4
1120	3	14.94	150	.19	6.66	1.081	0.76	16.16	-47.9	24.1
1125	Sampled									

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

DTW: 13.99
DTB: 30.25
PID: 1.3

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10/24/2014 **WELL #:** MW-12RS

SAMPLERS: AE **DEPTH OF PUMP INTAKE:** 23 **ft TIC or ft BGS (circle one)**

WEATHER CONDITIONS: 50° Hazy Skys **SCREENED/OPEN BOREHOLE INTERVAL:** 15.5-30.5 **ft TIC or ft BGS (circle one)**

SAMPLE ID: MW-12RS-Y7 **SAMPLE TIME:** 1050 **SAMPLE FLOW RATE:** 350 **ml/minute**
CLP ID: B9QR0

Instrument Type/Model: Complete and/or Circle at right					YSI Model # 6920 / ~~Horiba U-22~~ (circle one) Other (specify) pINext 5790					Instrument:
CURRENT TIME	**VOLUME PURGED**	**DEPTH TO WATER**	**FLOW RATE**	**DRAWDOWN (± 0.3 FT)**	**pH (± 0.1 SU)**	**SPECIFIC CONDUCTIVITY (± 3%)**	**DISSOLVED OXYGEN (± 10%)**	**TEMP. (± 10%)**	**REDOX POTENTIAL (± 10 mV)**	**TURBIDITY (± 10%)**
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: mL/min	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm / or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
10:00		14.09	280	0	6.45	.855	2.03	18.12	135.0	74.5
10:05		14.11	280	-.02	6.46	.842	1.72	17.94	121.9	55.1
10:10		14.10	280	+.01	6.42	.847	1.41	19.77	83.0	39.5
10:15		14.10	250	0	6.44	.852	1.32	19.92	40.5	34.3
10:20		14.10	250	0	6.44	.857	1.29	20.28	24.3	35.3
10:25		14.18	360	-.08	6.45	.862	1.18	19.75	5.6	27.4
10:30		14.16	340	+.02	6.45	.866	1.02	19.63	-7.0	23.2
10:35		14.16	340	0	6.43	.895	.97	19.48	-18.2	18.6
10:40	5 gal	14.16	340	0	6.44	.928	.98	19.44	-36.6	16.4
1050	Sample									

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

DTW: 17.17
DTB: 32.48
PID: 1.0

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10/24/2011 **WELL #:** MW-103S

SAMPLERS: AE **DEPTH OF PUMP INTAKE:** 24.9 ft TIC or ft BGS (circle one)

WEATHER CONDITIONS: 60° F Cloudy lightwind **SCREENED/OPEN BOREHOLE INTERVAL:** 17.4-32.4 ft TIC or ft BGS (circle one)

SAMPLE ID: MW-103S-47 **SAMPLE TIME:** 1345 **SAMPLE FLOW RATE:** 250 ml/minute
CLP ID: B9QN8

Instrument Type/Model: Complete and/or Circle at right — **YSI Model #** 6920 ~~Horiba U-22~~ (circle one) **Other (specify)** Pine# 5790 — **Instrument:**

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: mL/min	ft TIC / ft BGS (circle one)	SU	S/cm mS/cm / or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
13:15		17.23	250	0	5.80	.616	9.50	17.17	127.8	5.78
13:20		17.23	250	0	5.60	.618	9.23	17.85	142.4	1.57
13:25		17.23	250	0	5.56	.621	9.22	17.90	154.4	1.59
13:30		17.21	250	-.02	5.50	.612	9.21	18.23	159.4	.97
13:35		17.21	250	0	5.53	.603	9.16	18.17	168.3	.88
13:45	Sample									

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

DTW: 22.82
DTB: 35.05
PID: 0

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10/25/2011

WELL #: MW-1275

SAMPLERS: AE

DEPTH OF PUMP INTAKE: 28 ft TIC or ft BGS (circle one)

WEATHER CONDITIONS: 60°F Sunny light Breeze

SCREENED/OPEN BOREHOLE INTERVAL: 20.5 - 35.5 ft TIC or ft BGS (circle one)

SAMPLE ID: MW-1275-47 SAMPLE TIME: 1105 SAMPLE FLOW RATE: 300 ml/minute

CLP ID: B99Q9

Instrument Type/Model: Complete and/or Circle at right

YSI Model # 6920 / ~~Horiba U-22~~ (circle one)

Other (specify) Pine# 5797

Instrument:

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: mL/min	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm°/ or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
10:05		22.76	320	0	7.52	1.630	2.96	17.68	102.2	99.9
10:10		22.83	320	-.07	7.43	1.616	2.76	18.29	68.0	84.9
10:15		22.83	320	0	7.32	1.605	2.67	18.45	62.5	76.7
10:20		22.82	320	+.01	7.37	1.605	2.67	18.49	56.9	70.7
10:25		22.82	320	0	6.52	1.608	2.69	18.64	-3.1	69.0
10:30		22.82	320	0	7.08	1.607	2.75	18.87	-4.1	64.0
10:35		22.82	330	0	6.88	1.606	3.43	17.87	-1.8	65.9
10:40		22.83	330	-.01	6.73	1.603	3.79	17.99	0.8	58.3
10:45		22.83	330	0	6.75	1.604	4.49	18.04	5.0	51.2
10:50		22.83	330	0	6.77	1.602	4.60	18.98	9.1	48.2

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10/25/2011 **WELL #:** MW-127S4

SAMPLERS: AE **DEPTH OF PUMP INTAKE:** 28 **ft TIC or ft BGS (circle one)**

WEATHER CONDITIONS: 60°F. Sunny light Breeze **SCREENED/OPEN BOREHOLE INTERVAL:** 20.5-35.5 **ft TIC or ft BGS (circle one)**

SAMPLE ID: MW-127S-47 **SAMPLE TIME:** 1105 **SAMPLE FLOW RATE:** 300 **ml/minute**

CLP ID:

Instrument Type/Model: Complete and/or Circle at right **YSI Model #** 6920 **/ Horiba U-22 (circle one)** **Other (specify)** Pine # 5290 **Instrument:**

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: ml/min	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm / or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
10:55	7gal	22.83	330	0	6.80	1.602	4.75	19.35	11.8	44.1
11:05	Sample									

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10-25-11 **WELL #:** MW-7S

SAMPLERS: Z. Swarchy **DEPTH OF PUMP INTAKE:** 20 **ft TIC or ft BGS (circle one)**

WEATHER CONDITIONS: Sunny 65°F **SCREENED/OPEN BOREHOLE INTERVAL:** 14.5-24.5 **ft TIC or ~~ft BGS~~ (circle one)**

SAMPLE ID: MW-7S-Y7 **SAMPLE TIME:** 1345 **SAMPLE FLOW RATE:** 200 **ml/minute**
CLP ID: B9QR9

Initial DTW = 10.03'

Instrument Type/Model: Complete and/or Circle at right **YSI Model #** 650 MDS **/ Horiba U-22 (circle one)** **Other (specify)** Lammotte 2020e **Instrument:**

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: ml/min	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm° / or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
1315		10.20	200	.17	6.25	0.397	2.35	17.00	-95.0	3.02
1320		10.20	200		6.22	0.379	1.00	16.59	-93.2	4.31
1325		10.20	200		6.21	0.374	0.60	16.64	-92.2	3.04
1330		10.20	200		6.19	0.379	1.07	16.69	-92.5	2.59
1335		10.20	200		6.18	0.383	0.46	16.61	-92.1	2.36
1340	1.20	10.20	200		6.20	0.387	0.35	16.71	-91.1	2.19
1345	Sampled									

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10-25-11

WELL #: MW-5I

SAMPLERS: Z. Swavely

DEPTH OF PUMP INTAKE: 50' **ft TIC or ft BGS (circle one)**

WEATHER CONDITIONS: Sunny 60°F

SCREENED/OPEN BOREHOLE INTERVAL: 45-55 **ft TIC or ft BGS (circle one)**

SAMPLE ID: MW-5I-Y71

SAMPLE TIME: 1120 **SAMPLE FLOW RATE:** 200 **ml/minute**

CLP ID: MB9QR5

Initial DTW = 9.38'

Instrument Type/Model: Complete and/or Circle at right

YSI Model # 650 MDS **/ Horiba U-22 (circle one)**
Other (specify) Lamotte 2020e

Instrument:

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: mL/min	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm^c or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
1035		10.02	200	0.64	6.81	0.754	1.96	14.51	-86.7	5.75
1040		9.92	~~175~~	0.54	6.94	0.987	0.99	14.47	-62.3	3.05
1045		9.98	175		6.95	1.037	0.77	14.40	-50.4	—
1050	1.5	9.92	175		6.95	1.041	0.67	14.54	-44.4	2.41
1055		9.91	200		6.96	1.041	0.46	14.60	-41.3	1.13
1100	2	9.91	200		6.96	1.041	0.42	14.79	-38.9	0.69
1105		10.02	200+		6.95	1.035	0.26	14.32	-45.2	0.98
1110		9.88	200		6.95	1.037	0.21	14.61	-40.7	0.72
1115	3	9.84	200		6.96	1.040	0.16	14.89	-37.3	1.02
1120	Sampled									

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10/18/11
WELL #: MW-124 I
SAMPLERS: Allan Hunter
DEPTH OF PUMP INTAKE: ft TIC or ft BGS (circle one)
WEATHER CONDITIONS: Sunny, 70°F
SCREENED/OPEN BOREHOLE INTERVAL: ft TIC or ft BGS (circle one)
SAMPLE ID: MW-124 I-Y7
SAMPLE TIME: 1230
SAMPLE FLOW RATE: 250 ml/minute
CLP ID: B9QQ4

Instrument Type/Model: Complete and/or Circle at right
YSI Model # 650 MDS **/ Horiba U-22 (circle one)**
Other (specify) Lamotte 2020e
Instrument:

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units:	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm°/ or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
1056		15.53	250		8.04	1.056	0.98	17.92	168.1	19.9
1100		15.53	250		8.13	1.057	0.80	18.30	173.9	19.6
1105		15.55	250		8.21	1.060	0.58	18.55	180.8	
1110		15.55	250		8.18	1.072	0.47	18.55	200.5	16.8
1115		15.55	250		8.06	1.080	0.55	18.59	208.7	18.1
1120		15.55	250		7.77	1.089	0.75	18.58	217.7	17.1
1125		15.55	250		7.46	1.101	1.01	18.66	225.4	14.6
1130		15.57	250		7.15	1.127	1.33	18.77	201.2	14.6
1135		15.57	250		7.03	1.132	1.48	18.81	201.0	12.7
~~1140~~ 1150		15.57	250		6.91	1.158	1.85	18.63	196.9	11.2

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L   Redox Potential = -100 - +600 mV   Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing   BGS = Below Ground Surface

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10-18-11
WELL #: MW-124 I
SAMPLERS: Allan Hunter
DEPTH OF PUMP INTAKE: ft TIC or ft BGS (circle one)
WEATHER CONDITIONS: Sunny, 70°F
SCREENED/OPEN BOREHOLE INTERVAL: ft TIC or ft BGS (circle one)
SAMPLE ID: MW-124I-Y7
CLP ID: 39QQ4
SAMPLE TIME: 1210 **SAMPLE FLOW RATE:** 250 **ml/minute**

Instrument Type/Model: Complete and/or Circle at right
YSI Model # 650 MDS **/ Horiba U-22 (circle one)**
Other (specify) Lamotte 2020e
Instrument:

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: mL/min	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm / or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
1155		15.57	250		6.86	1.166	1.92	18.73	196.3	10.98
1200		15.57	250		6.82	1.173	2.06	18.69	196.2	11.3
1205		15.57	250		6.80	1.180	2.12	18.82	194.3	10.23

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10/18/11
WELL #: MW-124D

SAMPLERS: Allan Hunter
DEPTH OF PUMP INTAKE: 190' ft TIC or ft BGS (circle one)

WEATHER CONDITIONS: Sunny
SCREENED/OPEN BOREHOLE INTERVAL: 185'-195' ft TIC or ft BGS (circle one)

SAMPLE ID: MW-124D-Y7 **SAMPLE TIME:** 1150 **SAMPLE FLOW RATE:** 250 ml/minute
CLP ID: B9QQ3

Instrument Type/Model: Complete and/or Circle at right
YSI Model # 600 XLM **Horiba U-22** **(circle one)**
Other (specify) Lamotte 2020e
Instrument:

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: ml/m	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm, or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
1056		15.95	250		8.53	0.370	2.23	17.18	84.0	3.17
1100		16.15	250		8.66	0.366	2.56	17.17	95.9	3.42
1105		16.25	250		8.65	0.366	2.64	17.34	101.4	
1110	1	16.25	250		8.65	0.363	2.78	18.72	107.5	2.56
1115		16.25	250		8.62	0.364	2.96	18.87	113.6	2.81
1120		16.25	250		8.60	0.364	3.05	18.88	132.1	2.90
1125		16.24	250		8.61	0.363	3.04	18.94	127.7	3.04
1130	2	16.25	250		8.63	0.364	2.96	19.00	131.1	2.91
1135		16.24	250		8.61	0.365	3.10	19.02	134.0	2.66
1140	2.5	16.24	250		8.56	0.364	3.10	19.10	140.0	2.49

1150 sampled

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10/17/2011
WELL #: MW-114D

SAMPLERS: Allan Hunter
DEPTH OF PUMP INTAKE: 173' ft TIC or ft BGS (circle one)

WEATHER CONDITIONS:
SCREENED/OPEN BOREHOLE INTERVAL: 168' - 178' ft TIC or ft BGS (circle one)

SAMPLE ID: MW-114D-Y7
SAMPLE TIME: 1335 **SAMPLE FLOW RATE:** 250 **ml/minute**
CLP ID: B9QP6

Instrument Type/Model: Complete and/or Circle at right
YSI Model # 600XLM **/ Horiba U-22 (circle one)**
Other (specify) Lamotte 2020e
Instrument:

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: ml/m	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm, or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
1245		10.05	250		7.11	2.062	2.84	15.37	82.7	0.35
1250		10.05	250	0	7.05	2.308	1.00	15.63	26.3	1.10
1255		10.05	250	0	7.04	2.332	0.85	15.61	15.2	1.24
1300	1	10.05	250	0	7.10	2.339	0.91	15.85	9.2	1.69
1305		10.05	250	0	7.07	2.354	0.71	16.08	7.1	1.69
1310		10.05	250	0	7.09	2.367	0.60	16.28	-1.8	2.00
1315		10.05	250	0	7.10	2.369	0.58	16.42	-7.9	2.25
1320	2	10.05	250	0	7.11	2.376	0.58	16.39	-14.1	1.95
1325		10.05	250	0	7.11	2.376	0.58	16.42	-14.3	1.92
1330	2.5	10.05	250	0	7.11	2.381	0.58	16.37	-14.5	1.92

1335 Sampled

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L   Redox Potential = -100 - +600 mV   Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing   BGS = Below Ground Surface

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10-19-11

SAMPLERS: Z. Swavely A. Hunter

WEATHER CONDITIONS: Rain! Wind! ≈60°F

SAMPLE ID: MW-111I-Y7

CLP ID: B9QP4

SAMPLE TIME: 1405

WELL #: MW-111I

DEPTH OF PUMP INTAKE: 60 ft TIC or ft BGS (circle one)

SCREENED/OPEN BOREHOLE INTERVAL: 55-65 ft TIC or ft BGS (circle one)

SAMPLE FLOW RATE: 300 ml/minute

Instrument Type/Model: Complete and/or Circle at right

YSI Model # 650 MDS / Horiba U-22 (circle one)
Other (specify) Lamotte 2020e

Instrument:

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: mL/min	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm / or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
1335	2.5 liters purge gallon	21.15	300		7.05	.586	1.64	15.46	51.9	—
1340		21.13	300		7.12	.584	1.53	15.50	46.7	11.9
1345		21.13	300		7.13	.584	1.53	15.46	55.0	10.26
1350	4	21.13	300		7.14	.583	1.55	15.43	53.2	7.71
1355		21.13	300		7.14	.583	1.55	15.45	53.0	7.61
~~13~~ 1400		21.13	300		7.15	.583	1.55	15.48	53.4	6.49
1405	Sampled									

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

DTW = 16.66
DTB = 31.90

PID = 0.3

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10/20/11

WELL #: MW-110S

SAMPLERS: Allan Hunter

DEPTH OF PUMP INTAKE: 24' **ft TIC or ft BGS (circle one)**

WEATHER CONDITIONS:

SCREENED/OPEN BOREHOLE INTERVAL: 16.7'-31.7' **ft TIC or ft BGS (circle one)**

SAMPLE ID: MW-110S-Y7 **SAMPLE TIME:** 1055 **SAMPLE FLOW RATE:** 250 **ml/minute**

CLP ID: B9QP2

Instrument Type/Model: Complete and/or Circle at right

YSI Model # 600 XL **/ Horiba U-22 (circle one)**
Other (specify) Lamotte 2020E

Instrument:

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: ml/m	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm / or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
1010		16.66	250		5.93	0.331	8.91	17.59	214.7	8.62
1015		16.66	250		6.09	0.321	8.80	17.14	216.6	5.47
1020		16.66	250		6.11	0.319	8.69	17.58	210.3	5.06
1025	1	16.66	250		6.10	0.318	8.57	17.76	205.8	4.32
1030		16.66	250		6.10	0.315	8.52	17.66	166.8	4.08
1035		16.66	250		6.10	0.315	8.48	17.74	163.2	3.82
1040		16.66	250		6.10	0.315	8.39	17.90	160.6	3.62
1045	2	16.66	250		6.11	0.315	8.34	18.02	159.0	3.41
1050	2.25	16.66	250		6.11	0.314	8.30	18.21	157.5	3.24
1055	Sampled									

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

; = Top of Inner Casing BGS = Below Ground Surface

DTW - 16.75
DTB - 200

PID = 3.0

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10/20/11

WELL #: MW-123 D

SAMPLERS: Allan Hunter

DEPTH OF PUMP INTAKE: 191' **ft TIC or ft BGS (circle one)**

WEATHER CONDITIONS:

SCREENED/OPEN BOREHOLE INTERVAL: **ft TIC or ft BGS (circle one)**

SAMPLE ID: MW-123S-Y7 **SAMPLE TIME:** 1410 **SAMPLE FLOW RATE:** 250 **ml/minute**

CLP ID: B9QQ0

Instrument Type/Model: Complete and/or Circle at right | **YSI Model #** 600 XL **/ Horiba U-22 (circle one)** **Other (specify)** Lamotte 2020e | **Instrument:**

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units:	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
1330		16.75	250		6.99	0.566	1.84	16.77	252.8	24.3
1335		16.75	250		7.41	0.619	1.02	17.12	203.3	30.4
1340		16.75	250		7.33	0.624	0.90	17.44	77.5	29.7
1345		16.75	250		7.33	0.624	0.90	17.46	71.2	29.6
1350		16.75	250		7.31	0.627	0.97	18.40	-7.8	28.2
1355		16.75	250		7.31	0.630	1.04	18.89	-6.1	26.2
1400		16.77	250		7.30	0.633	1.03	18.97	-24.8	25.9
1405		16.73	250		7.30	0.631	0.99	18.02	-29.1	25.0
1410	Sampled									

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

DTW = 17.65
DTB = 200'

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

pump 18764

DATE: 10

WELL #: MW-2RD

SAMPLERS: Allan Hunter

DEPTH OF PUMP INTAKE: 191' **ft TIC or ft BGS (circle one)**

WEATHER CONDITIONS:

SCREENED/OPEN BOREHOLE INTERVAL: 188'-198' **ft TIC or ft BGS (circle one)**

SAMPLE ID: MW-2RD-Y7

SAMPLE TIME: 0935 **SAMPLE FLOW RATE:** 250 **ml/minute**

CLP ID: B9QR2

Instrument Type/Model: Complete and/or Circle at right

YSI Model # 600XL **/ Horiba U-22 (circle one)**
Other (specify) Lamotte 2020e

Instrument:

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: ml/m	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm^c or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
0850		18.03	250		6.52	0.500	4.26	13.30	-64.1	1.22
0855		17.99	250		6.81	0.494	3.47	13.66	-95.3	1.63
0900		17.99	250		6.97	0.493	3.01	14.10	-112.4	1.21
0905	1	17.99	250		7.04	0.493	2.07	14.51	-123.8	0.90
0910		17.99	250		7.11	0.494	1.79	14.58	-127.2	0.73
0915		17.99	250		7.14	0.494	1.63	14.43	-131.6	0.64
0920		17.99	250		7.18	0.493	1.63	14.38	-136.3	0.76
0925	2	17.99	250		7.23	0.493	1.57	14.45	-134.8	0.56
0930	2.25	17.99	250		7.22	0.491	1.55	15.47	-134.4	0.47
0935	Sampled									

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

DTW = 18.00'
DTB = 33.80'

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10/24/11
WELL #: MW-1BS-Y7

SAMPLERS: Allan Hunter
DEPTH OF PUMP INTAKE: 26.5' **ft TIC or ft BGS (circle one)**

WEATHER CONDITIONS:
SCREENED/OPEN BOREHOLE INTERVAL: 19'-34' **ft TIC or ft BGS (circle one)**

SAMPLE ID: MW-1BS-Y7 **SAMPLE TIME:** 1130 **SAMPLE FLOW RATE:** 250 **ml/minute**
CLP ID: BAQR1

Instrument Type/Model: Complete and/or Circle at right
YSI Model # 600 XL **/ Horiba U-22 (circle one)**
Other (specify) Lamotte 2020e
Instrument:

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: ml/m	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm / or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
1005		18.00	250		6.59	0.427	4.54	16.13	60.9	151
1010		18.00	250		6.65	0.425	4.40	16.64	75.1	128
1015		18.01	250		6.64	0.426	4.27	17.16	81.1	128
1020	1	18.01	250		6.64	0.426	4.24	17.70	80.4	122
1025		18.01	250		6.60	0.425	4.34	18.65	75.3	100.7
1030		18.01	250		6.61	0.425	4.23	18.75	73.2	93.0
1035		18.01	250		6.59	0.422	4.22	19.00	72.7	75.4
1040	2	18.01	250		6.56	0.421	4.19	19.21	73.3	67.5
1045		18.01	250		6.58	0.421	4.19	19.17	73.0	60.4
1050		18.01	250		6.56	0.420	4.17	19.18	74.0	56.7

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10/24/11

SAMPLERS: Allan

WEATHER CONDITIONS:

SAMPLE ID: MW-1BS-Y7
CLP ID: BGQR1

WELL #: MW-1RS-Y7

DEPTH OF PUMP INTAKE: 26.5' ft TIC or ft BGS (circle one)

SCREENED/OPEN BOREHOLE INTERVAL: 19' - 34' ft TIC or ft BGS (circle one)

SAMPLE TIME: 1130 SAMPLE FLOW RATE: 250 ml/minute

Instrument Type/Model: Complete and/or Circle at right

YSI Model # 600XL / Horiba U-22 (circle one)
Other (specify) Lamotte 2020E

Instrument:

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: ml/m	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm° / or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
1055		18.01	250		6.57	0.418	4.16	19.32	74.3	49.7
1100	3	18.01	250		6.57	0.416	4.15	19.54	73.8	45.3
1105		18.01	250		6.56	0.416	4.16	19.66	74.0	41.9
1110		18.01	250		6.56	0.415	4.15	19.46	73.8	38.3
1015		18.01	250		6.56	0.414	4.13	19.61	73.3	35.1
1020	4	18.01	250		6.57	0.413	4.13	19.41	72.9	33.6
1125		18.01	250		6.57	0.417	4.16	19.61	71.9	31.7
1130	Sampled									

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

2 of 2

DTW=9.75

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10/25/11 **WELL #:** MW-6S-Y7

SAMPLERS: Allan Hunter **DEPTH OF PUMP INTAKE:** 19' **ft TIC or ft BGS (circle one)**

WEATHER CONDITIONS: **SCREENED/OPEN BOREHOLE INTERVAL:** 14'-24' **ft TIC or ft BGS (circle one)**

SAMPLE ID: MW-6S-Y7 **SAMPLE TIME:** 1110 **SAMPLE FLOW RATE:** 250 **ml/minute**
CLP ID: B9QR8

Instrument Type/Model: Complete and/or Circle at right | **YSI Model #** 600XL **/ Horiba U-22 (circle one)** **Other (specify)** Lamotte 2020e | **Instrument:**

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: mL/min	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm, or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
1025		9.80	250		6.30	0.374	1.01	17.07	73.5	13.2
1030		9.80	250		6.20	0.376	0.68	17.18	-85.6	9.99
1035		9.80	250		6.19	0.376	0.58	17.20	-89.5	8.65
1040	1	9.80	250		6.19	0.374	0.49	17.20	-96.1	7.45
1045		9.80	250		6.18	0.372	0.42	17.17	-99.8	6.49
1050		9.80	250		6.16	0.372	0.37	17.26	-101.3	6.27
1055		9.80	250		6.21	0.373	0.33	17.29	-104.6	5.30
1160	2	9.80	250		6.24	0.378	0.32	17.26	-106.6	5.15
1105		9.80	250		6.23	0.378	0.31	17.25	-110.3	4.48
1110	Sampled									

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

Federal Creosote Superfund Site
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 10/19/11

WELL #: MW-111S

SAMPLERS: Allan Hunter

DEPTH OF PUMP INTAKE: 33.5' ft TIC or ft BGS (circle one)

WEATHER CONDITIONS: Raining

SCREENED/OPEN BOREHOLE INTERVAL: 31.8'-36.8' ft TIC or ft BGS (circle one)

SAMPLE ID: MW-111S-Y7 SAMPLE TIME: 1140 SAMPLE FLOW RATE: 250 ml/minute

CLP ID: B9QP5

Instrument Type/Model: Complete and/or Circle at right

YSI Model # 600 XL / Horiba U-22 (circle one) Other (specify) Lamotte 2020e

Instrument:

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units:	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm, or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
1105		20.54	250		6.32	1.014	1.00	15.44	21.9	36.3
1110		20.52	250		6.34	1.016	0.76	16.05	17.5	35.8
1115		20.55	250		6.34	1.021	0.70	16.12	14.0	32.5
1120		20.55	250		6.34	1.037	0.70	19.07	6.9	31.8
1125		20.55	250		6.32	1.129	0.39	16.04	-5.2	31.8
1130		20.55	250		6.32	1.129	0.38	16.04	-5.5	31.8
1135		20.55	250		6.32	1.132	0.36	16.71	-8.1	31.8
1140		~~20.55~~	~~250~~		~~6.32~~	Sampled				

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Turbidity = 0 - >500 NTUs
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

Appendix E

Data Usability Analysis Report

DATA USABILITY WORKSHEET
Site: Federal Creosote
Medium: Groundwater
Event: 2011 Annual Sampling of Monitoring Wells

Activity	Comment
Field Sampling	
Discuss sampling problems and field conditions that affect data usability.	Groundwater samples were collected from 30 monitoring wells in October 2011. Sampling procedures outlined in the August 2005 Sampling and Analysis Plan (SAP) and 2007 SAP Addendum was followed: A summary of samples collected is shown on Table 2-2. One field change request (FCR) was implemented for the groundwater sampling field program outlined in the Final Quality Assurance Project Plan (QAPP): ▪ FCR-5 dated September 14, 2011 addressed the elimination of Trace Selected Ion Monitoring (SIM) Semi-Volatile Organic Compound (SVOC) Analysis. For FCR-5, the two previous sampling events conducted in 2009 and 2010, groundwater samples were analyzed for both low and SIM SVOCs. SIM analysis was originally used due to the extremely low groundwater quality criteria set by New Jersey Department of Environmental Protection (NJDEP) for benzo(a)pryene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene. Use of the SIM method in the past two sampling events has resulted in detections of outlier compounds that are not contaminants of concern in field blanks and groundwater samples. These detections present complications when reporting data since they are well below the site-specific remedial goals in the 2002 operable unit (OU) 3 Groundwater Record of Decision (ROD). The aquifer at Federal Creosote is not used as a source for drinking water and a groundwater classification exception area has been established for this site. Based on the past two rounds of sampling results, SIM analysis detected compounds in contaminated wells. Therefore, the use of trace SIM analysis did not add value to the monitoring program. In addition, the site specific remedial goals set in the ROD are 5 micrograms per liter (µg/L), which can be detected using the low SVOC method. The use of SIM analysis is considered unnecessary. Additional field changes did not affect the usability of this round of groundwater data.

DATA USABILITY WORKSHEET
Site: Federal Creosote
Medium: Groundwater
Event: 2011 Annual Sampling of Monitoring Wells

Activity	Comment
Are samples representative of receptor exposure for this medium (e.g. sample depth, grab vs. composite, filtered vs. unfiltered, low flow, etc.)?	The sampling scheme in the Field Sampling Plan was adhered to and included upgradient and/or cross-gradient wells in un-impacted areas; wells in the source areas; wells downgradient of the source areas; and wells downgradient of the plume where contaminant concentrations were below regulatory acceptance levels. Samples were analyzed for trace level volatile organic compounds (VOCs) and low level SVOCs under Contract Laboratory (CLP) Statement of Work (SOW) SOM01.2, and metals under CLP SOW ISM01.3 along with natural attenuation (NA) parameters analyzed by Environmental Protection Agency (EPA) Division of Environmental Science and Assessment laboratory (DESA). These parameter groups are similar to those detected during the remedial investigation. All monitoring well samples were collected using low flow sampling and parameter stabilization techniques.
Assess the effect of field quality control (QC) results on data usability.	**BLANKS**: Volatile results indicated slight contamination in field and trip blanks (Table E-1 and E-2 respectively). Some of these are common laboratory contaminants. Most VOCs detected in both rinsate and trip blanks were below or within five times the contract required quantitation limit (CRQL). Acetone, carbon disulfide, methylene chloride, 2-butanone, chloroform, toluene, ethybenzene, m,p-xylene, 2-hexanone, and o-xylene were detected near the CRQL in several field rinsate and/or trip blanks. These compounds were detected at concentrations below their associated blank action levels, therefore the presence of these compounds in the blanks does not adversely impact data usability. Field/Rinsate Blanks – Several blanks have contaminant concentrations reported less than five times the CRQL. This affected 18 VOC which were qualified as non-detect "U" by the data validator. Twenty-five (25) metal results were also qualified "U" for analytical blank detections. Trip Blanks – All blanks have contaminant concentrations reported less than five times the CRQL. This affected one acetone result, which were qualified as non-detect "U" by the data validator Field duplicates are discussed in the Precision section. Methane, ethane, and ethene were not detected in the trip blanks. No SVOCs, metals, wet chemistry compounds, methane, ethane, or ethene

Activity	Comment
	were detected in the field blanks.
Summarize the effect of field sampling issues on data usability, if applicable.	No field sampling issues were identified.
Analytical Techniques	
Were the analytical methods appropriate to meet project needs?	Yes. Groundwater samples were analyzed for trace level VOCs and low level SVOCs according to CLP SOW for Organic Analytical Services for Superfund, SOM01.2. Inorganic iron and manganese analysis was performed according to CLP SOW for Inorganic Analysis, Multi-Media, Multi-Concentration, and ISM01.3. Additional parameters were analyzed as stated in the QAPP by the EPA DESA laboratory equivalent standard operating procedures (SOPs). These methods and the QAPP criteria have sufficient quality assurance/ quality control (QA/QC) requirements to provide data of appropriate quality for this remedial activity.
Were detection limits adequate?	Yes, detection limits were adequate. The sensitivity requirements listed in the QAPP were established to meet the data quality objectives of the groundwater monitoring. QAPP required sensitivities and project action level goals were met by the detection limits achieved. The laboratory was able to achieve the standard reporting limits for each analyte requested.
Summarize the effect of analytical technique issues on data usability, if applicable.	Surrogate Recoveries – Several surrogates and deuterated monitoring compounds (DMCs) exceeded QC criteria. This affected results for 79 SVOCs, which were estimated by the data validator. Thirteen (13) VOC samples were also estimated for DMC.

DATA USABILITY WORKSHEET
Site: Federal Creosote
Medium: Groundwater
Event: 2011 Annual Sampling of Monitoring Wells

Activity	Comment
Data Quality Objectives	
Precision - How were duplicates handled?	**FIELD DUPLICATES:** Table E-3 contains a summary of field duplicate results. Precision was assessed as follows: RPD was calculated when both sample results were detected. ABS was calculated for duplicate pairs with one detection or when the duplicate results were less than five times the CRQL. ABS criterion = ≤ CRQL RPD criterion = ≤ 50% One-hundred (100) percent of the RPDs and/or ABS were less than or equal to an RPD of 50 percent or less than CRQL respectively. The results were within criteria stated in the QAPP. Field duplicate results indicate sampling precision was achieved.
Accuracy - How were split samples handled?	Split samples were not collected. Data accuracy was measured from laboratory control samples, matrix spikes/matrix spike duplicates, laboratory duplicates and surrogates. Blank evaluations also contributed to the determination of accuracy. The data was determined to be accurate except for the deviations from established QC ranges noted in the data validation reports. These are summarized in the next section.
Representativeness - Indicate any problems associated with data representativeness (e.g., trip blank or rinsate blank contamination, chain of custody problems, etc.).	Nine VOCs were detected in some trip blanks and eight VOCs were detected in some field blanks, details are discussed above under field sampling blanks. The low levels achieved are typical of groundwater sampling and do not indicate any problems with the data set. The wells sampled reflect the objectives stated in the QAPP so the results should reflect representative data useful for monitoring the remedial action at the site.

DATA USABILITY WORKSHEET
Site: Federal Creosote
Medium: Groundwater
Event: 2011 Annual Sampling of Monitoring Wells

Activity	Comment
Completeness - Indicate any problems associated with data completeness (e.g., incorrect sample analysis, incomplete sample records, problems with field procedures, etc.).	The project data completeness goal was to generate 90 percent usable data and to collect at least 90 percent of planned data. 99.95 percent of the data were judged to be valid and usable (see Table E-4). The remaining less than one percent of the data was rejected as follows: 2 ferrous iron results for samples MW-114D-Y7 and MW-614D-Y7 were rejected due to high exceedances. In summary, the data set met the completeness goal established in the SAP.
Comparability - Indicate any problems associated with data comparability	No problems have been associated with data comparability.
Were the Data Quality Objectives (DQOs) specified in the QAPP satisfied?	Yes, the DQOs identified in the QAPP were satisfied.
Summarize the effect of DQO issues on data usability, if applicable.	There are no DQO issues that should affect data usability.
Data Validation and Interpretation	
What are the data validation requirements?	For organic samples, validators were required to check the following items: holding times, instrument performance checks, initial and continuing calibrations, blanks, deuterated or system monitoring compounds, laboratory control samples (LCS) or matrix spike/matrix spike duplicates (MS/MSD), regional QA/QC, internal standards, target compound identification, CRQLs, tentatively identified compounds, system performance, and overall assessment of data. For inorganic samples, validators were required to check holding times, CRQL standard, calibration, blanks, interference check standard, laboratory control samples, duplicate samples, matrix spike samples, inductively control sample (ICP) serial dilution, and field duplicates. Computer-Aided Data Review and Evaluation (CADRE) was used to assess compliance with the CLP specifications. EPA performed an overall assessment of the data.
What method or guidance was used to validate the data?	Region II's Environmental Services Assistance Team (ESAT) data validators reviewed the CLP data using: SOP HW-34 for volatile organics; SOP HW-35 for SVOCs; SOP HW-02 for inorganics; DESA used their internal validation to validate natural attenuation

DATA USABILITY WORKSHEET
Site: Federal Creosote
Medium: Groundwater
Event: 2011 Annual Sampling of Monitoring Wells

Activity	Comment
	parameters.
Was the data validation method consistent with guidance? Discuss any discrepancies.	Yes. The data validation method was consistent with regional guidance.
Were all data qualifiers defined? Discuss those which were not.	Yes. All data qualifiers were defined.
Which qualifiers represent useable data?	J, L, U, and UJ
Which qualifiers represent unusable data?	R
How are tentatively identified compounds handled?	Not applicable to the Groundwater Monitoring.
Summarize the effect of data validation and interpretation issues, if applicable.	Unusable data qualified with an “R” will not be used. All data, not rejected both qualified and unqualified, will be used.
Additional notes:	Several sample results were qualified as estimated “J” or “UJ” based on minor exceedences in initial and continuing calibrations in the SVOC analyses. Associated sample results were appropriately qualified. The ferrous iron results for two samples, MW-114D-Y7 and MW-614D-Y7 (blind duplicate of MW-114D-Y7) were rejected. The original results, 4.3 and 4.1 milligram per liter (mg/l), respectively, exceeded the HACH test limit range. The samples were diluted but the final results were not comparable.

DATA USABILITY WORKSHEET
Site: Federal Creosote
Medium: Groundwater
Event: 2011 Annual Sampling of Monitoring Wells

Data Validation Qualifiers

The following qualifiers are used with the reported data.

Qualifiers:

U	-	Compound was analyzed for but not detected. The associated numerical value is the sample quantitation.
J	-	Estimated data due to exceeded quality control criteria.
L	-	The identification of the analyte is acceptable, the reported value may be biased low.
UJ	-	Estimated non-detect data due to exceeded quality control criteria.
R	-	Rejected unusable data. Data is known to contain significant errors based on documented information and must not be used by the data user.

DATA USABILITY WORKSHEET
Site: Federal Creosote
Medium: Groundwater
Event: 2011 Annual Sampling of Monitoring Wells

Acronyms

ABS	absolute difference
CADRE	computer-aided data review and evaluation
CLP	Contract Laboratory program
CRQL	contact required quantitation limit
DESA	Division of Environmental Science and Assessment
DMC	deuterated monitoring compound
DQO	data quality objective
EPA	(United States) Environmental Protection Agency
ESAT	Environmental Services Assistance Team
FCR	field change request
ICP	inductively coupled plasma
L	liter
LCS	laboratory control sample
mg	milligram
µg	microgram
MS	matrix spike
MSD	matrix spike duplicate
NA	natural attenuation
NJDEP	New Jersey Department of Environmental Protection
QAPP	quality assurance project plan
QA/QC	quality assurance/ quality control
RPD	relative percent difference
SAP	sampling and analysis plan
SIM	selective ion monitoring
SOP	standard operating procedure
SOW	statement of work
SVOC	semi-volatile compounds
VOC	volatile organic compound

Table E-1
Field Blanks
2011 Groundwater Sampling - Long Term Monitoring Program
Federal Creosote Superfund Site
Manville, NJ

Chemical Name	CRQL	Unit	FB-10172011-Y7		FB-10182011-Y7		FB-10192011-Y7		FB-10202011-Y7		FB-10212011-Y7		FB-10242011-Y7		FB-10252011-Y7	
			10/17/2011		10/18/2011		10/19/2011		10/20/2011		10/21/2011		10/24/2011		10/25/2011	
Volatile Organic Compounds																
Methylene Chloride	0.5	µg/L	**2**		**1.4**		**1.5**		**1.3**		**1.8**		**2.2**		**1.6**	
2-Butanone	5	µg/L	5	U	5	U	5	U	5	U	5	U	*4.1*	*J*	5	U
Chloroform	0.5	µg/L	**0.8**		**0.52**		**0.52**		*0.43*	*J*	**0.72**		**0.86**		**0.62**	
Toluene	0.5	µg/L	**0.98**		**1**		**1.1**		**1**		**1.1**		**1.1**		**0.72**	
2-Hexanone	5	µg/L	5	U	5	U	5	U	5	U	5	U	*2.1*	*J*	5	U
Ethylbenzene	0.5	µg/L	*0.13*	*J*	*0.17*	*J*	*0.17*	*J*	*0.15*	*J*	*0.16*	*J*	*0.15*	*J*	*0.1*	*J*
m,p-Xylene	0.5	µg/L	*0.49*	*J*	**0.61**		**0.65**		**0.56**		**0.54**		*0.49*	*J*	*0.37*	*J*
o-Xylene	0.5	µg/L	*0.17*	*J*	*0.23*	*J*	*0.27*	*J*	*0.26*	*J*	*0.26*	*J*	*0.27*	*J*	*0.2*	*J*

Notes:
1. Compounds with no detects are not included in the table above.
2. Hits above the CRQL are highlighted and bolded.
3. Hits below the CRQL are highlighted and italicized.
4. No compounds were detected in the semi-volatile organic compounds, metals, wet chemistry, and methane, ethane, and ethene

CRQL = contract required quantitation limit
µg/L = microgram per liter
J = Estimated
U = Non-detect

Table E-2
Trip Blanks
2011 Groundwater Sampling - Long Term Monitoring Program
Federal Creosote Superfund Site
Manville, NJ

Chemical Name	CRQL	Unit	TB-10172011-Y7		TB-10182011-Y7		TB-10192011-Y7		TB-10202011-Y7		TB-10212011-Y7		TB-10242011-Y7		TB-10252011-Y7	
			10/17/2011		10/18/2011		10/19/2011		10/20/2011		10/21/2011		10/24/2011		10/25/2011	
Volatile Organic Compounds																
Carbon Disulfide	0.5	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	*0.47*	*J*	0.5	U	0.5	U
Acetone	5	µg/L	**12**		**11**		**10**		**13**		**16**		**12**		**13**	
Methylene Chloride	0.5	µg/L	**0.98**		**0.87**		**0.9**		**1.1**		**0.97**		**0.96**		**1.1**	
2-Butanone	5	µg/L	**5**	**J**	**5.5**		**5**		**5.8**		**6.8**		**7.9**		5	U
Chloroform	0.5	µg/L	*0.49*	*J*	*0.43*	*J*	*0.37*	*J*	**0.5**		*0.46*	*J*	*0.42*	*J*	**0.51**	
Toluene	0.5	µg/L	**0.95**		**1.2**		**1.4**		**1.4**		**1.1**		**0.85**		**0.89**	
Ethylbenzene	0.5	µg/L	*0.13*	*J*	*0.19*	*J*	*0.22*	*J*	*0.21*	*J*	*0.16*	*J*	*0.12*	*J*	*0.12*	*J*
m,p-Xylene	0.5	µg/L	**0.52**		**0.77**		**0.85**		**0.86**		**0.53**		*0.43*	*J*	*0.46*	*J*
o-Xylene	0.5	µg/L	*0.18*	*J*	*0.29*	*J*	*0.34*	*J*	*0.37*	*J*	*0.28*	*J*	*0.26*	*J*	*0.26*	*J*

Notes:
1. Compounds for which there were no detects are not included in the table above.
2. Hits above the CRQL are highlighted and bolded.
3. Hits below the CRQL are highlighted and italicized.
4. No compounds were detected in the methane, ethane, and ethene parameter fractions.

CRQL = contract required quantitation limit
µg/L = microgram per liter
J = Estimated
U = Non-detect

Table E-3
Field Duplicate Results
2011 Groundwater Sampling - Long Term Monitoring Program
Federal Creosote Superfund Site
Manville, NJ

Chemical Name	CRQL	5xCRQL	MW-114D-Y7 10/17/2011		MW-614D-Y7 10/17/2011		RPD	ABS	MW-2RS-Y7 10/21/2011		MW-602S-Y7 10/21/2011		RPD <50%	ABS
Volatile Organic Compounds														
Dichlorodifluoromethane	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
Chloromethane	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
Vinyl Chloride	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
Bromomethane	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
Chloroethane	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
Trichlorofluoromethane	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
1,1-Dichloroethene	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
1,1,2-Trichloro-1,2,2-trifluoroethane	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
Carbon Disulfide	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
Acetone	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
Methyl Acetate	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
Methylene Chloride	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
trans-1,2-Dichloroethene	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
Methyl Tert-Butyl Ether	0.5	2.5	0.5	U	0.5	U	NC	NA	0.19	J	0.17	J	NA	0.02
1,1-Dichloroethane	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
cis-1,2-Dichloroethene	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
2-Butanone	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
Chlorobromomethane	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
Chloroform	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
1,1,1-Trichloroethane	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
Cyclohexane	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
Carbon Tetrachloride	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
Benzene	0.5	2.5	0.5	U	0.5	U	NC	NA	62		60		3.28	NA
1,2-Dichloroethane	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
Trichloroethene	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
1,2-Dichloropropane	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
Bromodichloromethane	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
cis-1,3-Dichloropropene	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
4-Methyl-2-pentanone	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
Toluene	0.5	2.5	0.5	U	0.5	U	NC	NA	49		50		2.02	NA
Trans-1,3-Dichloropropene	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
1,1,2-Trichloroethane	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
Tetrachloroethene	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
Metylcyclohexane	0.5	2.5	0.5	U	0.5	U	NC	NA	0.33	J	0.37	J	NA	0.04
Dibromochloromethane	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
1,2-Dibromoethane	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
2-Hexanone	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA

Table E-3
Field Duplicate Results
2011 Groundwater Sampling - Long Term Monitoring Program
Federal Creosote Superfund Site
Manville, NJ

Chemical Name	**CRQL**		MW-114D-Y7		MW-614D-Y7		RPD	ABS	MW-2RS-Y7		MW-602S-Y7		RPD	ABS
		5xCRQL	10/17/2011		10/17/2011				10/21/2011		10/21/2011		<50%	
Chlorobenzene	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
Ethylbenzene	0.5	2.5	0.5	U	0.5	U	NC	NA	210		220		4.65	NA
m,p-Xylene	0.5	2.5	0.5	U	0.5	U	NC	NA	240		250		4.08	NA
o-Xylene	0.5	2.5	0.5	U	0.5	U	NC	NA	190		190		0.00	NA
Styrene	0.5	2.5	0.5	U	0.5	U	NC	NA	23		22		4.44	NA
Bromoform	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
Isopropylbenzene	0.5	2.5	0.5	U	0.5	U	NC	NA	26		27		3.77	NA
1,3-Dichlorobenzene	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
1,4-Dichlorobenzene	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
1,2-Dichlorobenzene	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
1,2-Dibromo-3-chloropropane	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
1,2,4-Trichlorobenzene	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
1,2,3-Trichlorobenzene	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
1,1,2,2-Tetrachloroethane	0.5	2.5	0.5	U	0.5	U	NC	NA	0.5	U	0.5	U	NC	NA
Semi-Volatile Organic Compounds														
Benzaldehyde	5	25	5	UJ	5	UJ	NC	NA	5	UJ	5	UJ	NC	NA
Phenol	5	25	5	UJ	5	UJ	NC	NA	5	UJ	5	UJ	NC	NA
bis(2-Chloroethyl)ether	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
2-Chlorophenol	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
2-Methylphenol	5	25	5	U	5	U	NC	NA	7		6.6		NA	0.40
2,2'-oxybis(1-Chloropropane)	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
Acetophenone	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
4-Methylphenol	5	25	5	U	5	U	NC	NA	8.6		8.1		NA	0.50
N-Nitroso-di-n-propylamine	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
Hexachloroethane	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
Nitrobenzene	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
Isophorone	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
2-Nitrophenol	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
2,4-Dimethylphenol	5	25	5	U	5	U	NC	NA	35		37		5.56	NA
bis(2-Chloroethoxy)methane	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
2,4-Dichlorophenol	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
Naphthalene	5	25	5	U	5	U	NC	NA	11000		11000		0.00	NA
4-Chloroaniline	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
Hexachlorobutadiene	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
Caprolactam	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
4-Chloro-3-methylphenol	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
2-Methylnaphthalene	5	25	5	U	5	U	NC	NA	200		200		0.00	NA
1,2,4,5-Tetrachlorobenzene	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA

Table E-3
Field Duplicate Results
2011 Groundwater Sampling - Long Term Monitoring Program
Federal Creosote Superfund Site
Manville, NJ

Chemical Name	CRQL		MW-114D-Y7		MW-614D-Y7		RPD	ABS	MW-2RS-Y7		MW-602S-Y7		RPD	ABS
		5xCRQL	10/17/2011		10/17/2011				10/21/2011		10/21/2011		<50%	
Hexachlorocyclopentadiene	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
2,4,6-Trichlorophenol	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
2,4,5-Trichlorophenol	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
1,1'Biphenyl	5	25	5	U	5	U	NC	NA	150		160		6.45	NA
2-Chloronaphthalene	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
2-Nitroaniline	10	50	10	UJ	10	UJ	NC	NA	10	UJ	10	U	NC	NA
Dimethylphthalate	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
Acenaphthylene	5	25	5	U	5	U	NC	NA	13		15		NA	2.00
2,6-Dinitrotoluene	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
3-Nitroaniline	10	50	10	UJ	10	UJ	NC	NA	10	UJ	10	U	NC	NA
Acenaphthene	5	25	5	U	5	U	NC	NA	460		480		4.26	NA
2,4-Dinitrophenol	10	50	10	UJ	10	UJ	NC	NA	10	UJ	10	U	NC	NA
4-Nitrophenol	10	50	10	UJ	10	UJ	NC	NA	10	UJ	10	U	NC	NA
Dibenzofuran	5	25	5	U	5	U	NC	NA	330		350		5.88	NA
2,4-Dinitrotoluene	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
Fluorene	5	25	5	U	5	U	NC	NA	210		220		4.65	NA
Diethylphthalate	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
4-Chlorophenyl-phenylether	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
4-Nitroaniline	10	50	10	UJ	10	UJ	NC	NA	10	UJ	10	U	NC	NA
4,6-Dinitro-2-methylphenol	10	50	10	U	10	U	NC	NA	10	U	10	U	NC	NA
N-Nitrosodiphenylamine	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
4-Bromophenyl-phenylether	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
Hexachlorobenzene	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
Atrazine	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
Pentachlorophenol	10	50	10	U	10	U	NC	NA	10	U	10	U	NC	NA
Phenanthrene	5	25	5	U	5	U	NC	NA	200		210		4.88	NA
Anthracene	5	25	5	U	5	U	NC	NA	11		11		0.00	NA
Carbazole	5	25	5	U	5	U	NC	NA	260		280		7.41	NA
Di-n-butylphthalate	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
Fluoranthene	5	25	5	U	5	U	NC	NA	13		15		14.29	2.00
Pyrene	5	25	5	U	5	U	NC	NA	7.1		8.1		13.16	1.00
Butylbenzylphthalate	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
3,3'-Dichlorobenzidine	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
Benzo(a)anthracene	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
Chrysene	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
bis(2-Ethylhexyl)phthalate	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
Di-n-octyl phthalate	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
Benzo(b)fluoranthene	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
Benzo(k)fluoranthene	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA

Table E-3
Field Duplicate Results
2011 Groundwater Sampling - Long Term Monitoring Program
Federal Creosote Superfund Site
Manville, NJ

Chemical Name	CRQL		MW-114D-Y7		MW-614D-Y7		RPD	ABS	MW-2RS-Y7		MW-602S-Y7		RPD	ABS
		5xCRQL	10/17/2011		10/17/2011				10/21/2011		10/21/2011		<50%	
Benzo(a)pyrene	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
Indeno(1,2,3-cd)pyrene	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
Dibenz(a,h)anthracene	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
Benzo(g,h,i)perylene	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
Chlorophenols	5	25	5	U	5	U	NC	NA	5	U	5	U	NC	NA
Inorganic Analytes														
Iron	100	500	591		599		1.34	NA	35900		41700		14.95	NA
Manganese	15	75	356		373		4.66	NA	18400		19900		7.83	NA
Methane, Ethane, Ethene														
Methane	1	5	2	U	2	U	NC	NA	19		18		5.41	NA
Ethane	1	5	2	U	2	U	NC	NA	2	U	2	U	NC	NA
Ethene	1	5	2	U	2	U	NC	NA	2	U	2	U	NC	NA
Additional Parameters														
Nitrogen	0.1	0.5	0.05	U	0.05	U	NC	NA	0.05	U	0.05	U	NC	NA
Alkalinity, Total (AS CaCO3)	0	0	73		78		6.62	NA	240		220		8.70	NA

Table E-3
Field Duplicate Results
2011 Groundwater Sampling - Long Term Monitoring Program
Federal Creosote Superfund Site
Manville, NJ

Chemical Name	CRQL	5xCRQL	MW-114D-Y7 10/17/2011		MW-614D-Y7 10/17/2011		RPD	ABS	MW-2RS-Y7 10/21/2011		MW-602S-Y7 10/21/2011		RPD <50%	ABS
Sulfide	1	5	0.01	U	0.01	U	NC	NA	0.2		0.18		10.53	NA
Sulfate	5	25	1100		1100		0.00	NA	210		210		0.00	NA
Ferrous Iron	0.03	0.15	4.3	R	4.1	R	0.05	NA	2.72		2.91		6.75	NA

Notes:
Sample pairs with RPD or ABS outside of criteria are highlighted in red.
ABS = absolute difference
CRQL = contract required quantitation limit
mg/L - miligram per liter
NA = not applicable
NC = not calculated
RPD = relative percent difference
µg/l = microgram per liter

Data Validation Qualifiers

J	Estimated data due to exceeded quality control criteria.
R	Data is rejected due to exceeded quality control criteria.
U	Compound was analyzed but not detected. The associated numerical value is the sample quantitation limit.
UJ	Not detected, quantitation limit may be inaccurate or imprecise.

Table E-4
Completeness
2011 Groundwater Sampling - Long Term Monitoring Program
Federal Creosote Superfund Site
Manville, NJ

Analytical Parameter	Non-Detects	No. of Hits	No. of Rejects	No. of Estimated Hits	Total	Percent Rejected	Percent Estimated Hits
VOCs	1548	84	0	18	1650	0.00	1.09
SVOCs	1991	153	0	17	2161	0.00	0.79
Metals	6	58	0	0	64	0.00	0.00
Ferrous Iron	3	27	2	3	33	6.06	9.09
Nitrate/Nitrite	13	19	0	0	32	0.00	0.00
Sulfate	1	31	0	0	32	0.00	0.00
Sulfide	26	6	0	0	32	0.00	0.00
Methane/Ethane/Ethene	82	14	0	0	96	0.00	0.00
Alkalinity	0	32	0	0	32	0.00	0.00
Sum	3670	424	2	38	4132	6.06	10.97
Total Completeness						99.95	

Percent of all Data Rejected	0.05	
Percent of all Ferrous Iron Rejected	6.06	
Percent of all Hits Estimated	0.00	(does not include estimated non-detect data)
Percent Complete (judged valid)	99.95	(Includes all estimated data)

Notes:
The counts and calculations above do not include field or trip blank samples only environmental samples.

SVOC = semi-volatile organic compound
VOC = volatile organic compound

Appendix F

Complete Validated Data

			Sample Code	MW-103S-Y7		MW-104RS-Y7		MW-110D-Y7		MW-110I-Y7	
			Sample Name								
			Sample Date	10/24/2011		10/24/2011		10/20/2011		10/20/2011	
Cas Rn	Chemical Name	Analytic Method	Unit \\ Depth	17.4 to 32.4 ft. bgs		15.5 to 30.5 ft. bgs		180 to 190 ft. bgs		60 to 70 ft. bgs	
(Group Code)	**(Group Description)**										
FERROUS-IRON	**FERROUS IRON**										
FE(FS)	FERROUS IRON	HACH8146	mg/L	0.03	U	2.43		0.31		0.12	
FIELDMEASURE	**FIELD MEASUREMENTS**										
pH	pH	FIELDMEASUREMEN	SU	5.53		6.66		6.96		7.37	
SC	SPECIFIC CONDUCTANCE	FIELDMEASUREMEN	mS/cm	0.603		1.081		2.698		0.963	
DISS_OXYGEN	DISSOLVED OXYGEN	FIELDMEASUREMEN	mg/L	9.16		0.76		1.18		1.6	
TEMPERATURE	TEMP	FIELDMEASUREMEN	deg c	18.17		16.16		17.2		17.17	
ORP	OXIDATION-REDUCTION POTENTIA	FIELDMEASUREMEN	mV	168.3		-47.9		19.9		41.1	
TURB	TURBIDITY	FIELDMEASUREMEN	NTU	0.88		24.1		1		4.47	

Cas Rn	Chemical Name	Analytic Method	Sample Code / Sample Name / Sample Date / Unit \\ Depth	MW-110S-Y7 10/20/2011 16.7 to 31.7 ft. bgs		MW-111D-Y7 10/19/2011 182 to 192 ft. bgs		MW-111I-Y7 10/19/2011 55 to 65 ft. bgs		MW-111S-Y7 10/19/2011 31.8 to 36.8 ft. bgs	
(Group Code)	**(Group Description)**										
FERROUS-IRON	**FERROUS IRON**										
FE(FS)	FERROUS IRON	HACH8146	mg/L	0.01	J	0.04		0.03		3.4	
FIELDMEASURE	**FIELD MEASUREMENTS**										
pH	pH	FIELDMEASUREMEN	SU	6.11		9.2		7.15		6.32	
SC	SPECIFIC CONDUCTANCE	FIELDMEASUREMEN	mS/cm	0.314		0.821		0.583		1.132	
DISS_OXYGEN	DISSOLVED OXYGEN	FIELDMEASUREMEN	mg/L	8.3		4.39		1.55		0.36	
TEMPERATURE	TEMP	FIELDMEASUREMEN	deg c	18.21		16.84		15.48		16.71	
ORP	OXIDATION-REDUCTION POTENTIA	FIELDMEASUREMEN	mV	157.5		100.6		53.4		-8.1	
TURB	TURBIDITY	FIELDMEASUREMEN	NTU	3.24		4.43		6.49		31.8	

			Sample Code	MW-114D-Y7		MW-114I-Y7		MW-114S-Y7		MW-116I-Y7	
			Sample Name								
			Sample Date	10/17/2011		10/17/2011		10/17/2011		10/18/2011	
Cas Rn	Chemical Name	Analytic Method	Unit \\ Depth	168 to 178 ft. bgs		60 to 70 ft. bgs		6.6 to 19.6 ft. bgs		61.3 to 71.3 ft. bgs	
(Group Code)	**(Group Description)**										
FERROUS-IRON	**FERROUS IRON**										
FE(FS)	FERROUS IRON	HACH8146	mg/L	4.3	R	0.03	U	0.02	J	0.08	
FIELDMEASURE	**FIELD MEASUREMENTS**										
pH	pH	FIELDMEASUREMEN	SU	7.11		7.91		6.42		7.23	
SC	SPECIFIC CONDUCTANCE	FIELDMEASUREMEN	mS/cm	2.381		0.828		0.621		1.49	
DISS_OXYGEN	DISSOLVED OXYGEN	FIELDMEASUREMEN	mg/L	0.58		1.01		6.75		0.48	
TEMPERATURE	TEMP	FIELDMEASUREMEN	deg c	16.37		14.86		15.63		15.45	
ORP	OXIDATION-REDUCTION POTENTIA	FIELDMEASUREMEN	mV	-14.5		-46.7		158.8		-170.4	
TURB	TURBIDITY	FIELDMEASUREMEN	NTU	1.92		0.22		0.68		0.7	

Cas Rn	Chemical Name	Analytic Method	Sample Code Sample Name Sample Date Unit \\ Depth	MW-123D-Y7 10/20/2011 188 to 198 ft. bgs		MW-123I-Y7 10/20/2011 50 to 60 ft. bgs		MW-123S-Y7 10/20/2011 17 to 32 ft. bgs		MW-124D-Y7 10/18/2011 185 to 195 ft. bgs		MW-124I-Y7 10/18/2011 53.5 to 63.5 ft. bgs	
(Group Code)	**(Group Description)**												
FERROUS-IRON	**FERROUS IRON**												
FE(FS)	FERROUS IRON	HACH8146	mg/L	0.14		0.05		0.83		0.03	U	0.03	
FIELDMEASURE	**FIELD MEASUREMENTS**												
pH	pH	FIELDMEASUREMEN	SU	7.3		7.68		6.37		8.56		6.8	
SC	SPECIFIC CONDUCTANCE	FIELDMEASUREMEN	mS/cm	0.631		1.285		2.825		0.364		1.18	
DISS_OXYGEN	DISSOLVED OXYGEN	FIELDMEASUREMEN	mg/L	0.99		2.04		3.46		3.1		2.12	
TEMPERATURE	TEMP	FIELDMEASUREMEN	deg c	18.12		19.42		20.11		19.1		18.82	
ORP	OXIDATION-REDUCTION POTENTIA	FIELDMEASUREMEN	mV	-29.1		122.5		82.9		140		194.3	
TURB	TURBIDITY	FIELDMEASUREMEN	NTU	25		6.74		27.7		2.49		10.23	

Cas Rn	Chemical Name	Analytic Method	Sample Code Sample Name Sample Date Unit \\ Depth	MW-124S-Y7 10/18/2011 18 to 33 ft. bgs		MW-125I-Y7 10/18/2011 48 to 58 ft. bgs		MW-125S-Y7 10/18/2011 6 to 21 ft. bgs		MW-126S-Y7 10/19/2011 13.5 to 28.5 ft. bgs		MW-127S-Y7 10/25/2011 20.5 to 35.5 ft. bgs	
(Group Code)	**(Group Description)**												
FERROUS-IRON	**FERROUS IRON**												
FE(FS)	FERROUS IRON	HACH8146	mg/L	1.18		0.01	J	0.31		0.09		0.69	
FIELDMEASURE	**FIELD MEASUREMENTS**												
pH	pH	FIELDMEASUREMEN	SU	5.99		7.09		5.71		5.6		6.8	
SC	SPECIFIC CONDUCTANCE	FIELDMEASUREMEN	mS/cm	5.932		0.584		0.345		0.392		1.602	
DISS_OXYGEN	DISSOLVED OXYGEN	FIELDMEASUREMEN	mg/L	1.73		0.67		6.19		6.53		4.75	
TEMPERATURE	TEMP	FIELDMEASUREMEN	deg c	21.69		16.04		20.16		19.72		19.35	
ORP	OXIDATION-REDUCTION POTENTIA	FIELDMEASUREMEN	mV	106.1		170.4		155.1		280.1		11.8	
TURB	TURBIDITY	FIELDMEASUREMEN	NTU	74.2		0.69		11.5		20.5		44.1	

Cas Rn	Chemical Name	Analytic Method	Sample Code Sample Name Sample Date Unit \\ Depth	MW-12RS-Y7 10/24/2011 15.5 to 30.5 ft. bgs	MW-1RS-Y7 10/24/2011 19 to 34 ft. bgs	MW-2RD-Y7 10/21/2011 188 to 198 ft. bgs	MW-2RI-Y7 10/21/2011 64 to 74 ft. bgs	MW-2RS-Y7 10/21/2011 17 to 32 ft. bgs
(Group Code)	**(Group Description)**							
FERROUS-IRON	**FERROUS IRON**							
FE(FS)	FERROUS IRON	HACH8146	mg/L	2.83	0.14	0.29	0.25	2.72
FIELDMEASURE	**FIELD MEASUREMENTS**							
pH	pH	FIELDMEASUREMEN	SU	6.44	6.57	7.22	7.36	6.36
SC	SPECIFIC CONDUCTANCE	FIELDMEASUREMEN	mS/cm	0.928	0.411	0.491	1.036	0.996
DISS_OXYGEN	DISSOLVED OXYGEN	FIELDMEASUREMEN	mg/L	0.98	4.16	1.55	1.97	0.12
TEMPERATURE	TEMP	FIELDMEASUREMEN	deg c	19.44	19.61	15.47	15.66	14.91
ORP	OXIDATION-REDUCTION POTENTIA	FIELDMEASUREMEN	mV	-36.6	71.9	-134.4	-106.2	-91.7
TURB	TURBIDITY	FIELDMEASUREMEN	NTU	16.4	31.7	0.47	9.1	2.89

Cas Rn	Chemical Name	Analytic Method	Sample Code Sample Name Sample Date Unit \\ Depth	MW-5I-Y7 10/25/2011 45 to 55 ft. bgs		MW-602S-Y7 10/21/2011 17 to 32 ft. bgs		MW-614D-Y7 10/17/2011 168 to 178 ft. bgs		MW-6S-Y7 10/25/2011 14 to 24 ft. bgs		MW-7S-Y7 10/25/2011 14.5 to 24.5 ft. bgs	
(Group Code)	**(Group Description)**												
FERROUS-IRON	**FERROUS IRON**												
FE(FS)	FERROUS IRON	HACH8146	mg/L	0.66		2.91		4.1	R	2.26		2.77	
FIELDMEASURE	**FIELD MEASUREMENTS**												
pH	pH	FIELDMEASUREMEN	SU	6.96						6.23		6.2	
SC	SPECIFIC CONDUCTANCE	FIELDMEASUREMEN	mS/cm	1.04						0.378		0.387	
DISS_OXYGEN	DISSOLVED OXYGEN	FIELDMEASUREMEN	mg/L	0.16						0.31		0.35	
TEMPERATURE	TEMP	FIELDMEASUREMEN	deg c	14.89						17.25		16.71	
ORP	OXIDATION-REDUCTION POTENTIA	FIELDMEASUREMEN	mV	-37.3						-110.3		-91.1	
TURB	TURBIDITY	FIELDMEASUREMEN	NTU	1.02						4.48		2.19	

Cas Rn	Chemical Name	Analytic Method	Sample Code Sample Name Sample Date Unit \\ Depth	MW-103S-Y7 10/24/2011 17.4 to 32.4 ft. bgs		MW-104RS-Y7 10/24/2011 15.5 to 30.5 ft. bgs		MW-110D-Y7 10/20/2011 180 to 190 ft. bgs		MW-110I-Y7 10/20/2011 60 to 70 ft. bgs	
(Group Code)	**(Group Description)**										
1-GWMW-VOA	**Volatile Organic Compounds**										
75-71-8	Dichlorodifluoromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
74-87-3	Chloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-01-4	Vinyl Chloride	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
74-83-9	Bromomethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-00-3	Chloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-69-4	Trichlorofluoromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-35-4	1,1-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-15-0	Carbon Disulfide	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
67-64-1	Acetone	TVOA	ug/L	5	U	5	U	5	U	5	U
79-20-9	Methyl Acetate	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-09-2	Methylene Chloride	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
156-60-5	trans-1,2-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.11	J
1634-04-4	Methyl Tert-Butyl Ether	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-34-3	1,1-Dichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
156-59-2	cis-1,2-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	2.2	
78-93-3	2-Butanone	TVOA	ug/L	5	U	5	U	5	U	5	U
74-97-5	CHLOROBROMOMETHANE	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
67-66-3	Chloroform	TVOA	ug/L	0.5	U	3.5		0.5	U	0.5	U
71-55-6	1,1,1-Trichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
110-82-7	Cyclohexane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
56-23-5	Carbon Tetrachloride	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
71-43-2	Benzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	1.1	
107-06-2	1,2-Dichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
79-01-6	Trichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.78	
78-87-5	1,2-Dichloropropane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-27-4	Bromodichloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
10061-01-5	cis-1,3-Dichloropropene	TVOA	ug/L	0.5	U	0.5	UJ	0.5	U	0.5	U
108-10-1	4-Methyl-2-pentanone	TVOA	ug/L	5	U	5	U	5	U	5	U
108-88-3	Toluene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
10061-02-6	Trans-1,3-Dichloropropene	TVOA	ug/L	0.5	U	0.5	UJ	0.5	U	0.5	U
79-00-5	1,1,2-Trichloroethane	TVOA	ug/L	0.5	U	0.5	UJ	0.5	U	0.5	U
127-18-4	Tetrachloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
108-87-2	Metylcyclohexane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
124-48-1	Dibromochloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
106-93-4	1,2-Dibromoethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
591-78-6	2-Hexanone	TVOA	ug/L	5	U	5	U	5	U	5	U

Cas Rn	Chemical Name	Analytic Method	Sample Code Sample Name Sample Date Unit \\ Depth	MW-103S-Y7 10/24/2011 17.4 to 32.4 ft. bgs		MW-104RS-Y7 10/24/2011 15.5 to 30.5 ft. bgs		MW-110D-Y7 10/20/2011 180 to 190 ft. bgs		MW-110I-Y7 10/20/2011 60 to 70 ft. bgs	
108-90-7	Chlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
100-41-4	Ethylbenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.81	
179601-23-1	m,p-Xylene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
95-47-6	O-XYLENE	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
100-42-5	Styrene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-25-2	Bromoform	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
98-82-8	Isopropylbenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	2.7	
541-73-1	1,3-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
106-46-7	1,4-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
95-50-1	1,2-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
96-12-8	1,2-Dibromo-3-chloropropane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
120-82-1	1,2,4-Trichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
87-61-6	1,2,3-TRICHLOROBENZENE	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
79-34-5	1,1,2,2-Tetrachloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
2-GWMW-SVOA	**Semi-Volatile Organic Compounds**										
100-52-7	Benzaldehyde	SVOA-LOW	ug/L	5	UJ	5	UJ	5	UJ	5.1	UJ
108-95-2	Phenol	SVOA-LOW	ug/L	5	UJ	5	UJ	5	UJ	5.1	UJ
111-44-4	bis(2-Chloroethyl)ether	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
95-57-8	2-Chlorophenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
95-48-7	2-Methylphenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
108-60-1	2,2'-oxybis(1-Chloropropane)	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
98-86-2	Acetophenone	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
106-44-5	4-Methylphenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
621-64-7	N-Nitroso-di-n-propylamine	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
67-72-1	Hexachloroethane	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
98-95-3	Nitrobenzene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
78-59-1	Isophorone	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
88-75-5	2-Nitrophenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
105-67-9	2,4-Dimethylphenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
111-91-1	bis(2-Chloroethoxy)methane	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
120-83-2	2,4-Dichlorophenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
91-20-3	Naphthalene	SVOA-LOW	ug/L	5	U	5	U	5	U	4.8	J
106-47-8	4-Chloroaniline	SVOA-LOW	ug/L	5	UJ	5	UJ	5	UJ	5.1	U
87-68-3	Hexachlorobutadiene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
105-60-2	Caprolactam	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
59-50-7	4-Chloro-3-methylphenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
91-57-6	2-Methylnaphthalene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
95-94-3	1,2,4,5-TETRACHLOROBENZENE	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U

Cas Rn	Chemical Name	Analytic Method	Sample Code Sample Name Sample Date Unit \\ Depth	MW-103S-Y7 10/24/2011 17.4 to 32.4 ft. bgs		MW-104RS-Y7 10/24/2011 15.5 to 30.5 ft. bgs		MW-110D-Y7 10/20/2011 180 to 190 ft. bgs		MW-110I-Y7 10/20/2011 60 to 70 ft. bgs	
77-47-4	Hexachlorocyclopentadiene	SVOA-LOW	ug/L	5	UJ	5	UJ	5	UJ	5.1	U
88-06-2	2,4,6-Trichlorophenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
95-95-4	2,4,5-Trichlorophenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
92-52-4	1,1'Biphenyl	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
91-58-7	2-Chloronaphthalene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
88-74-4	2-Nitroaniline	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
131-11-3	Dimethylphthalate	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
208-96-8	Acenaphthylene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
606-20-2	2,6-Dinitrotoluene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
99-09-2	3-Nitroaniline	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
83-32-9	Acenaphthene	SVOA-LOW	ug/L	5	U	5	U	5	U	28	
51-28-5	2,4-Dinitrophenol	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
100-02-7	4-Nitrophenol	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
132-64-9	Dibenzofuran	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
121-14-2	2,4-Dinitrotoluene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
86-73-7	Fluorene	SVOA-LOW	ug/L	5	U	5	U	5	U	20	
84-66-2	Diethylphthalate	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
7005-72-3	4-Chlorophenyl-phenylether	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
100-01-6	4-Nitroaniline	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
534-52-1	4,6-Dinitro-2-methylphenol	SVOA-LOW	ug/L	10	U	10	U	10	U	10	U
86-30-6	N-Nitrosodiphenylamine	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
101-55-3	4-Bromophenyl-phenylether	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
118-74-1	Hexachlorobenzene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
1912-24-9	Atrazine	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
87-86-5	Pentachlorophenol	SVOA-LOW	ug/L	10	U	10	U	10	U	10	U
85-01-8	Phenanthrene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
120-12-7	Anthracene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
86-74-8	Carbazole	SVOA-LOW	ug/L	5	U	5	U	5	U	44	
84-74-2	Di-n-butylphthalate	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
206-44-0	Fluoranthene	SVOA-LOW	ug/L	5	U	5	U	5	U	2.2	J
129-00-0	Pyrene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
85-68-7	Butylbenzylphthalate	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
91-94-1	3,3'-Dichlorobenzidine	SVOA-LOW	ug/L	5	UJ	5	UJ	5	UJ	5.1	U
56-55-3	Benzo(a)anthracene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
218-01-9	Chrysene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
117-81-7	bis(2-Ethylhexyl)phthalate	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
117-84-0	Di-n-octyl phthalate	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
205-99-2	Benzo(b)fluoranthene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
207-08-9	Benzo(k)fluoranthene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U

Cas Rn	Chemical Name	Analytic Method	Sample Code / Sample Name / Sample Date / Unit \\ Depth	MW-103S-Y7 10/24/2011 17.4 to 32.4 ft. bgs		MW-104RS-Y7 10/24/2011 15.5 to 30.5 ft. bgs		MW-110D-Y7 10/20/2011 180 to 190 ft. bgs		MW-110I-Y7 10/20/2011 60 to 70 ft. bgs	
50-32-8	Benzo(a)pyrene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
193-39-5	Indeno(1,2,3-cd)pyrene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
53-70-3	Dibenz(a,h)anthracene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
191-24-2	Benzo(g,h,i)perylene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
58-90-2	CHLOROPHENOLS	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
3-MET-W	**Inorganic Analytes**										
7429-90-5	Aluminum	MET-W	UG/L								
7440-36-0	Antimony	MET-W	UG/L								
7440-38-2	Arsenic	MET-W	UG/L								
7440-39-3	Barium	MET-W	UG/L								
7440-41-7	Beryllium	MET-W	UG/L								
7440-43-9	Cadmium	MET-W	UG/L								
7440-70-2	Calcium	MET-W	UG/L								
7440-47-3	Chromium	MET-W	UG/L								
7440-48-4	Cobalt	MET-W	UG/L								
7440-50-8	Copper	MET-W	UG/L								
7439-89-6	Iron	MET-W	UG/L	161		13400		423		271	
7439-92-1	Lead	MET-W	UG/L								
7439-95-4	Magnesium	MET-W	UG/L								
7439-96-5	Manganese	MET-W	UG/L	15	U	584		470		875	
7440-02-0	Nickel	MET-W	UG/L								
9/7/7440	Potassium	MET-W	UG/L								
7782-49-2	Selenium	MET-W	UG/L								
7440-22-4	Silver	MET-W	UG/L								
7440-23-5	Sodium	MET-W	UG/L								
7440-28-0	Thallium	MET-W	UG/L								
7440-62-2	Vanadium	MET-W	UG/L								
7440-66-6	Zinc	MET-W	UG/L								
4-MEE	**Methane, Ethane, Ethene**										
74-82-8	Methane	RSKSOP147	ug/l	2	U	2	U	2	U	91	
74-84-0	Ethane	RSKSOP147	ug/l	2	U	2	U	2	U	2	U
74-85-1	Ethene	RSKSOP147	ug/l	2	U	2	U	2	U	2	U
5-Wetchem	**Additional Parameters**										
7727-37-9	NITROGEN	MCAWW353-2	mg/L	2.6		1.6		0.05	U	0.05	U
NH3	NITROGEN, AMMONIA	MCAWW350-1	mg/L								
ALK	Alkalinity, Total (AS CaCO3)	SM2320	mg/L	24		120		80		210	
18496-25-8	SULFIDE	MCAWW376-1	mg/L	0.01	U	0.01	U	0.01	U	0.016	
SO4	SULFATE	MCAWW375-	mg/L	40		30		1000		8.5	
FE	Ferrous Iron	HACH8146	mg/L								

Cas Rn	Chemical Name	Analytic Method	Sample Code Sample Name Sample Date Unit \\ Depth	MW-110S-Y7 10/20/2011 16.7 to 31.7 ft. bgs		MW-111D-Y7 10/19/2011 182 to 192 ft. bgs		MW-111I-Y7 10/19/2011 55 to 65 ft. bgs		MW-111S-Y7 10/19/2011 31.8 to 36.8 ft. bgs	
(Group Code)	**(Group Description)**										
1-GWMW-VOA	**Volatile Organic Compounds**										
75-71-8	Dichlorodifluoromethane	TVOA	ug/L	0.5	U	0.5	UJ	0.5	U	0.5	U
74-87-3	Chloromethane	TVOA	ug/L	0.5	U	0.5	UJ	0.5	U	0.5	U
75-01-4	Vinyl Chloride	TVOA	ug/L	0.5	U	0.5	UJ	0.5	U	0.5	U
74-83-9	Bromomethane	TVOA	ug/L	0.5	U	0.5	UJ	0.5	U	0.5	U
75-00-3	Chloroethane	TVOA	ug/L	0.5	U	0.5	UJ	0.5	U	0.5	U
75-69-4	Trichlorofluoromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-35-4	1,1-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-15-0	Carbon Disulfide	TVOA	ug/L	0.5	U	0.5	UJ	0.5	U	0.5	U
67-64-1	Acetone	TVOA	ug/L	5	U	5	U	5	U	5	U
79-20-9	Methyl Acetate	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-09-2	Methylene Chloride	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
156-60-5	trans-1,2-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
1634-04-4	Methyl Tert-Butyl Ether	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.19	J
75-34-3	1,1-Dichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
156-59-2	cis-1,2-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
78-93-3	2-Butanone	TVOA	ug/L	5	U	5	U	5	U	5	U
74-97-5	CHLOROBROMOMETHANE	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
67-66-3	Chloroform	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
71-55-6	1,1,1-Trichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
110-82-7	Cyclohexane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
56-23-5	Carbon Tetrachloride	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
71-43-2	Benzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
107-06-2	1,2-Dichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
79-01-6	Trichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.74		0.84	
78-87-5	1,2-Dichloropropane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-27-4	Bromodichloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
10061-01-5	cis-1,3-Dichloropropene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
108-10-1	4-Methyl-2-pentanone	TVOA	ug/L	5	U	5	U	5	U	5	U
108-88-3	Toluene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	2	
10061-02-6	Trans-1,3-Dichloropropene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
79-00-5	1,1,2-Trichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
127-18-4	Tetrachloroethene	TVOA	ug/L	0.5	U	0.5	U	1.8		20	
108-87-2	Metylcyclohexane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
124-48-1	Dibromochloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
106-93-4	1,2-Dibromoethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
591-78-6	2-Hexanone	TVOA	ug/L	5	U	5	U	5	U	5	U

			Sample Code	MW-110S-Y7		MW-111D-Y7		MW-111I-Y7		MW-111S-Y7	
			Sample Name								
			Sample Date	10/20/2011		10/19/2011		10/19/2011		10/19/2011	
Cas Rn	Chemical Name	Analytic Method	Unit \\ Depth	16.7 to 31.7 ft. bgs		182 to 192 ft. bgs		55 to 65 ft. bgs		31.8 to 36.8 ft. bgs	
108-90-7	Chlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
100-41-4	Ethylbenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	5.5	
179601-23-1	m,p-Xylene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	11	
95-47-6	O-XYLENE	TVOA	ug/L	0.5	U	0.5	U	0.5	U	14	
100-42-5	Styrene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-25-2	Bromoform	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
98-82-8	Isopropylbenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	5.1	
541-73-1	1,3-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
106-46-7	1,4-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
95-50-1	1,2-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
96-12-8	1,2-Dibromo-3-chloropropane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
120-82-1	1,2,4-Trichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
87-61-6	1,2,3-TRICHLOROBENZENE	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
79-34-5	1,1,2,2-Tetrachloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
2-GWMW-SVOA	**Semi-Volatile Organic Compounds**										
100-52-7	Benzaldehyde	SVOA-LOW	ug/L	5	UJ	5.1	UJ	5	UJ	5.1	UJ
108-95-2	Phenol	SVOA-LOW	ug/L	5	UJ	5.1	UJ	5	UJ	5.1	UJ
111-44-4	bis(2-Chloroethyl)ether	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
95-57-8	2-Chlorophenol	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
95-48-7	2-Methylphenol	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
108-60-1	2,2'-oxybis(1-Chloropropane)	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
98-86-2	Acetophenone	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
106-44-5	4-Methylphenol	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
621-64-7	N-Nitroso-di-n-propylamine	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
67-72-1	Hexachloroethane	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
98-95-3	Nitrobenzene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
78-59-1	Isophorone	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
88-75-5	2-Nitrophenol	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
105-67-9	2,4-Dimethylphenol	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
111-91-1	bis(2-Chloroethoxy)methane	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
120-83-2	2,4-Dichlorophenol	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
91-20-3	Naphthalene	SVOA-LOW	ug/L	5	U	5.1	U	11		860	
106-47-8	4-Chloroaniline	SVOA-LOW	ug/L	5	UJ	5.1	U	5	UJ	5.1	U
87-68-3	Hexachlorobutadiene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
105-60-2	Caprolactam	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
59-50-7	4-Chloro-3-methylphenol	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
91-57-6	2-Methylnaphthalene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
95-94-3	1,2,4,5-TETRACHLOROBENZENE	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U

Cas Rn	Chemical Name	Analytic Method	Sample Code / Sample Name / Sample Date / Unit \\ Depth	MW-110S-Y7 10/20/2011 16.7 to 31.7 ft. bgs		MW-111D-Y7 10/19/2011 182 to 192 ft. bgs		MW-111I-Y7 10/19/2011 55 to 65 ft. bgs		MW-111S-Y7 10/19/2011 31.8 to 36.8 ft. bgs	
77-47-4	Hexachlorocyclopentadiene	SVOA-LOW	ug/L	5	UJ	5.1	U	5	UJ	5.1	U
88-06-2	2,4,6-Trichlorophenol	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
95-95-4	2,4,5-Trichlorophenol	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
92-52-4	1,1'Biphenyl	SVOA-LOW	ug/L	5	U	5.1	U	5	U	160	
91-58-7	2-Chloronaphthalene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
88-74-4	2-Nitroaniline	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
131-11-3	Dimethylphthalate	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
208-96-8	Acenaphthylene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	9.4	
606-20-2	2,6-Dinitrotoluene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
99-09-2	3-Nitroaniline	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
83-32-9	Acenaphthene	SVOA-LOW	ug/L	5	U	5.1	U	4.8	J	260	
51-28-5	2,4-Dinitrophenol	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
100-02-7	4-Nitrophenol	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
132-64-9	Dibenzofuran	SVOA-LOW	ug/L	5	U	5.1	U	5.8		290	
121-14-2	2,4-Dinitrotoluene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
86-73-7	Fluorene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	59	
84-66-2	Diethylphthalate	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
7005-72-3	4-Chlorophenyl-phenylether	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
100-01-6	4-Nitroaniline	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
534-52-1	4,6-Dinitro-2-methylphenol	SVOA-LOW	ug/L	10	U	10	U	10	U	10	U
86-30-6	N-Nitrosodiphenylamine	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
101-55-3	4-Bromophenyl-phenylether	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
118-74-1	Hexachlorobenzene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
1912-24-9	Atrazine	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
87-86-5	Pentachlorophenol	SVOA-LOW	ug/L	10	U	10	U	10	U	10	U
85-01-8	Phenanthrene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	130	
120-12-7	Anthracene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	11	
86-74-8	Carbazole	SVOA-LOW	ug/L	5	U	5.1	U	2.8	J	260	
84-74-2	Di-n-butylphthalate	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
206-44-0	Fluoranthene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	18	
129-00-0	Pyrene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	9.5	
85-68-7	Butylbenzylphthalate	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
91-94-1	3,3'-Dichlorobenzidine	SVOA-LOW	ug/L	5	UJ	5.1	U	5	UJ	5.1	U
56-55-3	Benzo(a)anthracene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
218-01-9	Chrysene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
117-81-7	bis(2-Ethylhexyl)phthalate	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
117-84-0	Di-n-octyl phthalate	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
205-99-2	Benzo(b)fluoranthene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
207-08-9	Benzo(k)fluoranthene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U

Cas Rn	Chemical Name	Analytic Method	Sample Code Sample Name Sample Date Unit \\ Depth	MW-110S-Y7 10/20/2011 16.7 to 31.7 ft. bgs		MW-111D-Y7 10/19/2011 182 to 192 ft. bgs		MW-111I-Y7 10/19/2011 55 to 65 ft. bgs		MW-111S-Y7 10/19/2011 31.8 to 36.8 ft. bgs	
50-32-8	Benzo(a)pyrene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
193-39-5	Indeno(1,2,3-cd)pyrene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
53-70-3	Dibenz(a,h)anthracene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
191-24-2	Benzo(g,h,i)perylene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
58-90-2	CHLOROPHENOLS	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.1	U
3-MET-W	**Inorganic Analytes**										
7429-90-5	Aluminum	MET-W	UG/L								
7440-36-0	Antimony	MET-W	UG/L								
7440-38-2	Arsenic	MET-W	UG/L								
7440-39-3	Barium	MET-W	UG/L								
7440-41-7	Beryllium	MET-W	UG/L								
7440-43-9	Cadmium	MET-W	UG/L								
7440-70-2	Calcium	MET-W	UG/L								
7440-47-3	Chromium	MET-W	UG/L								
7440-48-4	Cobalt	MET-W	UG/L								
7440-50-8	Copper	MET-W	UG/L								
7439-89-6	Iron	MET-W	UG/L	125		378		1210		5990	
7439-92-1	Lead	MET-W	UG/L								
7439-95-4	Magnesium	MET-W	UG/L								
7439-96-5	Manganese	MET-W	UG/L	15	U	23.6		27.6		13700	
7440-02-0	Nickel	MET-W	UG/L								
9/7/7440	Potassium	MET-W	UG/L								
7782-49-2	Selenium	MET-W	UG/L								
7440-22-4	Silver	MET-W	UG/L								
7440-23-5	Sodium	MET-W	UG/L								
7440-28-0	Thallium	MET-W	UG/L								
7440-62-2	Vanadium	MET-W	UG/L								
7440-66-6	Zinc	MET-W	UG/L								
4-MEE	**Methane, Ethane, Ethene**										
74-82-8	Methane	RSKSOP147	ug/l	2	U	2	U	11		290	
74-84-0	Ethane	RSKSOP147	ug/l	2	U	2	U	2	U	2	U
74-85-1	Ethene	RSKSOP147	ug/l	2	U	2	U	2	U	2	U
5-Wetchem	**Additional Parameters**										
7727-37-9	NITROGEN	MCAWW353-2	mg/L	6.1		1.5		3.2		0.05	U
NH3	NITROGEN, AMMONIA	MCAWW350-1	mg/L								
ALK	Alkalinity, Total (AS CaCO3)	SM2320	mg/L	35		130		120		140	
18496-25-8	SULFIDE	MCAWW376-1	mg/L	0.01	U	0.01	U	0.01	U	0.01	U
SO4	SULFATE	MCAWW375-	mg/L	44		200		37		5	
FE	Ferrous Iron	HACH8146	mg/L								

Cas Rn	Chemical Name	Analytic Method	Sample Code / Sample Name / Sample Date / Unit \\ Depth	MW-114D-Y7 10/17/2011 168 to 178 ft. bgs		MW-114I-Y7 10/17/2011 60 to 70 ft. bgs		MW-114S-Y7 10/17/2011 6.6 to 19.6 ft. bgs		MW-116I-Y7 10/18/2011 61.3 to 71.3 ft. bgs	
(Group Code)	**(Group Description)**										
1-GWMW-VOA	**Volatile Organic Compounds**										
75-71-8	Dichlorodifluoromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
74-87-3	Chloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-01-4	Vinyl Chloride	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
74-83-9	Bromomethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-00-3	Chloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-69-4	Trichlorofluoromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-35-4	1,1-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-15-0	Carbon Disulfide	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
67-64-1	Acetone	TVOA	ug/L	5	U	5	U	5	U	5	U
79-20-9	Methyl Acetate	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-09-2	Methylene Chloride	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
156-60-5	trans-1,2-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
1634-04-4	Methyl Tert-Butyl Ether	TVOA	ug/L	0.5	U	0.55		0.5	U	0.5	U
75-34-3	1,1-Dichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
156-59-2	cis-1,2-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
78-93-3	2-Butanone	TVOA	ug/L	5	U	5	U	5	U	5	U
74-97-5	CHLOROBROMOMETHANE	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
67-66-3	Chloroform	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
71-55-6	1,1,1-Trichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
110-82-7	Cyclohexane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
56-23-5	Carbon Tetrachloride	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
71-43-2	Benzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
107-06-2	1,2-Dichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
79-01-6	Trichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
78-87-5	1,2-Dichloropropane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-27-4	Bromodichloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
10061-01-5	cis-1,3-Dichloropropene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
108-10-1	4-Methyl-2-pentanone	TVOA	ug/L	5	U	5	U	5	U	5	U
108-88-3	Toluene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
10061-02-6	Trans-1,3-Dichloropropene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
79-00-5	1,1,2-Trichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
127-18-4	Tetrachloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
108-87-2	Metylcyclohexane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
124-48-1	Dibromochloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
106-93-4	1,2-Dibromoethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
591-78-6	2-Hexanone	TVOA	ug/L	5	U	5	U	5	U	5	U

Cas Rn	Chemical Name	Analytic Method	Sample Code Sample Name Sample Date Unit \\ Depth	MW-114D-Y7 10/17/2011 168 to 178 ft. bgs		MW-114I-Y7 10/17/2011 60 to 70 ft. bgs		MW-114S-Y7 10/17/2011 6.6 to 19.6 ft. bgs		MW-116I-Y7 10/18/2011 61.3 to 71.3 ft. bgs	
108-90-7	Chlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
100-41-4	Ethylbenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	8	
179601-23-1	m,p-Xylene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	5.7	
95-47-6	O-XYLENE	TVOA	ug/L	0.5	U	0.5	U	0.5	U	5.9	
100-42-5	Styrene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-25-2	Bromoform	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
98-82-8	Isopropylbenzene	TVOA	ug/L	0.5	U	0.21	J	0.5	U	3.4	
541-73-1	1,3-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
106-46-7	1,4-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
95-50-1	1,2-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
96-12-8	1,2-Dibromo-3-chloropropane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
120-82-1	1,2,4-Trichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
87-61-6	1,2,3-TRICHLOROBENZENE	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
79-34-5	1,1,2,2-Tetrachloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
2-GWMW-SVOA	**Semi-Volatile Organic Compounds**										
100-52-7	Benzaldehyde	SVOA-LOW	ug/L	5	UJ	5.1	UJ	5	UJ	5	UJ
108-95-2	Phenol	SVOA-LOW	ug/L	5	UJ	5.1	UJ	5	UJ	5	UJ
111-44-4	bis(2-Chloroethyl)ether	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
95-57-8	2-Chlorophenol	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
95-48-7	2-Methylphenol	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
98-86-2	Acetophenone	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
106-44-5	4-Methylphenol	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
621-64-7	N-Nitroso-di-n-propylamine	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
67-72-1	Hexachloroethane	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
98-95-3	Nitrobenzene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
78-59-1	Isophorone	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
88-75-5	2-Nitrophenol	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
105-67-9	2,4-Dimethylphenol	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
111-91-1	bis(2-Chloroethoxy)methane	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
120-83-2	2,4-Dichlorophenol	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
91-20-3	Naphthalene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	350	
106-47-8	4-Chloroaniline	SVOA-LOW	ug/L	5	U	5.1	U	5	UJ	5	U
87-68-3	Hexachlorobutadiene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
105-60-2	Caprolactam	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
59-50-7	4-Chloro-3-methylphenol	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
91-57-6	2-Methylnaphthalene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	2.6	J
95-94-3	1,2,4,5-TETRACHLOROBENZENE	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U

Cas Rn	Chemical Name	Analytic Method	Sample Code Sample Name Sample Date Unit \\ Depth	MW-114D-Y7 10/17/2011 168 to 178 ft. bgs		MW-114I-Y7 10/17/2011 60 to 70 ft. bgs		MW-114S-Y7 10/17/2011 6.6 to 19.6 ft. bgs		MW-116I-Y7 10/18/2011 61.3 to 71.3 ft. bgs	
77-47-4	Hexachlorocyclopentadiene	SVOA-LOW	ug/L	5	U	5.1	U	5	UJ	5	U
88-06-2	2,4,6-Trichlorophenol	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
95-95-4	2,4,5-Trichlorophenol	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
92-52-4	1,1'Biphenyl	SVOA-LOW	ug/L	5	U	5.1	U	5	U	26	
91-58-7	2-Chloronaphthalene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
88-74-4	2-Nitroaniline	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
131-11-3	Dimethylphthalate	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
208-96-8	Acenaphthylene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
606-20-2	2,6-Dinitrotoluene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
99-09-2	3-Nitroaniline	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
83-32-9	Acenaphthene	SVOA-LOW	ug/L	5	U	15		5	U	44	
51-28-5	2,4-Dinitrophenol	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
100-02-7	4-Nitrophenol	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
132-64-9	Dibenzofuran	SVOA-LOW	ug/L	5	U	5.1	U	5	U	79	
121-14-2	2,4-Dinitrotoluene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
86-73-7	Fluorene	SVOA-LOW	ug/L	5	U	8.8		5	U	27	
84-66-2	Diethylphthalate	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
7005-72-3	4-Chlorophenyl-phenylether	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
100-01-6	4-Nitroaniline	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
534-52-1	4,6-Dinitro-2-methylphenol	SVOA-LOW	ug/L	10	U	10	U	10	U	10	U
86-30-6	N-Nitrosodiphenylamine	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
101-55-3	4-Bromophenyl-phenylether	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
118-74-1	Hexachlorobenzene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
1912-24-9	Atrazine	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
87-86-5	Pentachlorophenol	SVOA-LOW	ug/L	10	U	10	U	10	U	10	U
85-01-8	Phenanthrene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	44	
120-12-7	Anthracene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5.2	
86-74-8	Carbazole	SVOA-LOW	ug/L	5	U	5.1	U	5	U	44	
84-74-2	Di-n-butylphthalate	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
206-44-0	Fluoranthene	SVOA-LOW	ug/L	5	U	3.8	J	5	U	24	
129-00-0	Pyrene	SVOA-LOW	ug/L	5	U	3.3	J	5	U	14	
85-68-7	Butylbenzylphthalate	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
91-94-1	3,3'-Dichlorobenzidine	SVOA-LOW	ug/L	5	U	5.1	U	5	UJ	5	U
56-55-3	Benzo(a)anthracene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
218-01-9	Chrysene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
117-84-0	Di-n-octyl phthalate	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
205-99-2	Benzo(b)fluoranthene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
207-08-9	Benzo(k)fluoranthene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U

Cas Rn	Chemical Name	Analytic Method	Sample Code / Sample Name / Sample Date / Unit \\ Depth	MW-114D-Y7 10/17/2011 168 to 178 ft. bgs		MW-114I-Y7 10/17/2011 60 to 70 ft. bgs		MW-114S-Y7 10/17/2011 6.6 to 19.6 ft. bgs		MW-116I-Y7 10/18/2011 61.3 to 71.3 ft. bgs	
50-32-8	Benzo(a)pyrene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
53-70-3	Dibenz(a,h)anthracene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
191-24-2	Benzo(g,h,i)perylene	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
58-90-2	CHLOROPHENOLS	SVOA-LOW	ug/L	5	U	5.1	U	5	U	5	U
3-MET-W	**Inorganic Analytes**										
7429-90-5	Aluminum	MET-W	UG/L								
7440-36-0	Antimony	MET-W	UG/L								
7440-38-2	Arsenic	MET-W	UG/L								
7440-39-3	Barium	MET-W	UG/L								
7440-41-7	Beryllium	MET-W	UG/L								
7440-43-9	Cadmium	MET-W	UG/L								
7440-70-2	Calcium	MET-W	UG/L								
7440-47-3	Chromium	MET-W	UG/L								
7440-48-4	Cobalt	MET-W	UG/L								
7440-50-8	Copper	MET-W	UG/L								
7439-89-6	Iron	MET-W	UG/L	591		100	U	104		126	
7439-92-1	Lead	MET-W	UG/L								
7439-95-4	Magnesium	MET-W	UG/L								
7439-96-5	Manganese	MET-W	UG/L	356		1790		15	U	7080	
7440-02-0	Nickel	MET-W	UG/L								
9/7/7440	Potassium	MET-W	UG/L								
7782-49-2	Selenium	MET-W	UG/L								
7440-22-4	Silver	MET-W	UG/L								
7440-23-5	Sodium	MET-W	UG/L								
7440-28-0	Thallium	MET-W	UG/L								
7440-62-2	Vanadium	MET-W	UG/L								
7440-66-6	Zinc	MET-W	UG/L								
4-MEE	**Methane, Ethane, Ethene**										
74-82-8	Methane	RSKSOP147	ug/l	2	U	23		2	U	13	
74-84-0	Ethane	RSKSOP147	ug/l	2	U	2	U	2	U	2	U
74-85-1	Ethene	RSKSOP147	ug/l	2	U	2	U	2	U	2	U
5-Wetchem	**Additional Parameters**										
7727-37-9	NITROGEN	MCAWW353-2	mg/L	0.05	U	0.05	U	3.4		0.11	
NH3	NITROGEN, AMMONIA	MCAWW350-1	mg/L								
ALK	Alkalinity, Total (AS CaCO3)	SM2320	mg/L	73		210		110		140	
18496-25-8	SULFIDE	MCAWW376-1	mg/L	0.01	U	0.01	U	0.01	U	0.01	U
SO4	SULFATE	MCAWW375-	mg/L	1100		9.4		30		15	
FE	Ferrous Iron	HACH8146	mg/L								

Cas Rn	Chemical Name	Analytic Method	Sample Code / Sample Name / Sample Date / Unit \\ Depth	MW-123D-Y7 10/20/2011 188 to 198 ft. bgs		MW-123I-Y7 10/20/2011 50 to 60 ft. bgs		MW-123S-Y7 10/20/2011 17 to 32 ft. bgs		MW-124D-Y7 10/18/2011 185 to 195 ft. bgs	
(Group Code)	**(Group Description)**										
1-GWMW-VOA	**Volatile Organic Compounds**										
75-71-8	Dichlorodifluoromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
74-87-3	Chloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-01-4	Vinyl Chloride	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
74-83-9	Bromomethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-00-3	Chloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-69-4	Trichlorofluoromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-35-4	1,1-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-15-0	Carbon Disulfide	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
67-64-1	Acetone	TVOA	ug/L	5	U	5	U	5	U	5	U
79-20-9	Methyl Acetate	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-09-2	Methylene Chloride	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
156-60-5	trans-1,2-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
1634-04-4	Methyl Tert-Butyl Ether	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-34-3	1,1-Dichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
156-59-2	cis-1,2-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
78-93-3	2-Butanone	TVOA	ug/L	5	U	5	U	5	U	5	U
74-97-5	CHLOROBROMOMETHANE	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
67-66-3	Chloroform	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
71-55-6	1,1,1-Trichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.26	J	0.5	U
110-82-7	Cyclohexane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
56-23-5	Carbon Tetrachloride	TVOA	ug/L	0.28	J	0.44	J	0.5	U	0.5	U
71-43-2	Benzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
107-06-2	1,2-Dichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
79-01-6	Trichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
78-87-5	1,2-Dichloropropane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-27-4	Bromodichloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
10061-01-5	cis-1,3-Dichloropropene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
108-10-1	4-Methyl-2-pentanone	TVOA	ug/L	5	U	5	U	5	U	5	U
108-88-3	Toluene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
10061-02-6	Trans-1,3-Dichloropropene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
79-00-5	1,1,2-Trichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
127-18-4	Tetrachloroethene	TVOA	ug/L	0.18	J	0.32	J	0.5		0.5	U
108-87-2	Metylcyclohexane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
124-48-1	Dibromochloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
106-93-4	1,2-Dibromoethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
591-78-6	2-Hexanone	TVOA	ug/L	5	U	5	U	5	U	5	U

			Sample Code	MW-123D-Y7		MW-123I-Y7		MW-123S-Y7		MW-124D-Y7	
			Sample Name								
			Sample Date	10/20/2011		10/20/2011		10/20/2011		10/18/2011	
Cas Rn	Chemical Name	Analytic Method	Unit \\ Depth	188 to 198 ft. bgs		50 to 60 ft. bgs		17 to 32 ft. bgs		185 to 195 ft. bgs	
108-90-7	Chlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
100-41-4	Ethylbenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
179601-23-1	m,p-Xylene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
95-47-6	O-XYLENE	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
100-42-5	Styrene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-25-2	Bromoform	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
98-82-8	Isopropylbenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
541-73-1	1,3-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
106-46-7	1,4-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
95-50-1	1,2-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
96-12-8	1,2-Dibromo-3-chloropropane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
120-82-1	1,2,4-Trichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
87-61-6	1,2,3-TRICHLOROBENZENE	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
79-34-5	1,1,2,2-Tetrachloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
2-GWMW-SVOA	**Semi-Volatile Organic Compounds**										
100-52-7	Benzaldehyde	SVOA-LOW	ug/L	5.1	UJ	5	UJ	5	UJ	5.1	UJ
108-95-2	Phenol	SVOA-LOW	ug/L	5.1	UJ	5	UJ	5	UJ	5.1	UJ
111-44-4	bis(2-Chloroethyl)ether	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
95-57-8	2-Chlorophenol	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
95-48-7	2-Methylphenol	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
108-60-1	2,2'-oxybis(1-Chloropropane)	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
98-86-2	Acetophenone	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
106-44-5	4-Methylphenol	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
621-64-7	N-Nitroso-di-n-propylamine	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
67-72-1	Hexachloroethane	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
98-95-3	Nitrobenzene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
78-59-1	Isophorone	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
88-75-5	2-Nitrophenol	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
105-67-9	2,4-Dimethylphenol	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
111-91-1	bis(2-Chloroethoxy)methane	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
120-83-2	2,4-Dichlorophenol	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
91-20-3	Naphthalene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
106-47-8	4-Chloroaniline	SVOA-LOW	ug/L	5.1	UJ	5	UJ	5	UJ	5.1	UJ
87-68-3	Hexachlorobutadiene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
105-60-2	Caprolactam	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
59-50-7	4-Chloro-3-methylphenol	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
91-57-6	2-Methylnaphthalene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
95-94-3	1,2,4,5-TETRACHLOROBENZENE	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U

			Sample Code	MW-123D-Y7		MW-123I-Y7		MW-123S-Y7		MW-124D-Y7	
			Sample Name								
			Sample Date	10/20/2011		10/20/2011		10/20/2011		10/18/2011	
Cas Rn	Chemical Name	Analytic Method	Unit \\ Depth	188 to 198 ft. bgs		50 to 60 ft. bgs		17 to 32 ft. bgs		185 to 195 ft. bgs	
77-47-4	Hexachlorocyclopentadiene	SVOA-LOW	ug/L	5.1	UJ	5	UJ	5	UJ	5.1	UJ
88-06-2	2,4,6-Trichlorophenol	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
95-95-4	2,4,5-Trichlorophenol	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
92-52-4	1,1'Biphenyl	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
91-58-7	2-Chloronaphthalene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
88-74-4	2-Nitroaniline	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
131-11-3	Dimethylphthalate	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
208-96-8	Acenaphthylene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
606-20-2	2,6-Dinitrotoluene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
99-09-2	3-Nitroaniline	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
83-32-9	Acenaphthene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
51-28-5	2,4-Dinitrophenol	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
100-02-7	4-Nitrophenol	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
132-64-9	Dibenzofuran	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
121-14-2	2,4-Dinitrotoluene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
86-73-7	Fluorene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
84-66-2	Diethylphthalate	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
7005-72-3	4-Chlorophenyl-phenylether	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
100-01-6	4-Nitroaniline	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
534-52-1	4,6-Dinitro-2-methylphenol	SVOA-LOW	ug/L	10	U	10	U	10	U	10	U
86-30-6	N-Nitrosodiphenylamine	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
101-55-3	4-Bromophenyl-phenylether	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
118-74-1	Hexachlorobenzene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
1912-24-9	Atrazine	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
87-86-5	Pentachlorophenol	SVOA-LOW	ug/L	10	U	10	U	10	U	10	U
85-01-8	Phenanthrene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
120-12-7	Anthracene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
86-74-8	Carbazole	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
84-74-2	Di-n-butylphthalate	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
206-44-0	Fluoranthene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
129-00-0	Pyrene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
85-68-7	Butylbenzylphthalate	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
91-94-1	3,3'-Dichlorobenzidine	SVOA-LOW	ug/L	5.1	UJ	5	UJ	5	UJ	5.1	UJ
56-55-3	Benzo(a)anthracene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
218-01-9	Chrysene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
117-81-7	bis(2-Ethylhexyl)phthalate	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
117-84-0	Di-n-octyl phthalate	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
205-99-2	Benzo(b)fluoranthene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
207-08-9	Benzo(k)fluoranthene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U

			Sample Code	MW-123D-Y7		MW-123I-Y7		MW-123S-Y7		MW-124D-Y7	
			Sample Name								
			Sample Date	10/20/2011		10/20/2011		10/20/2011		10/18/2011	
Cas Rn	Chemical Name	Analytic Method	Unit \\ Depth	188 to 198 ft. bgs		50 to 60 ft. bgs		17 to 32 ft. bgs		185 to 195 ft. bgs	
50-32-8	Benzo(a)pyrene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
193-39-5	Indeno(1,2,3-cd)pyrene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
53-70-3	Dibenz(a,h)anthracene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
191-24-2	Benzo(g,h,i)perylene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
58-90-2	CHLOROPHENOLS	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
3-MET-W	**Inorganic Analytes**										
7429-90-5	Aluminum	MET-W	UG/L								
7440-36-0	Antimony	MET-W	UG/L								
7440-38-2	Arsenic	MET-W	UG/L								
7440-39-3	Barium	MET-W	UG/L								
7440-41-7	Beryllium	MET-W	UG/L								
7440-43-9	Cadmium	MET-W	UG/L								
7440-70-2	Calcium	MET-W	UG/L								
7440-47-3	Chromium	MET-W	UG/L								
7440-48-4	Cobalt	MET-W	UG/L								
7440-50-8	Copper	MET-W	UG/L								
7439-89-6	Iron	MET-W	UG/L	2030		515		3260		305	
7439-92-1	Lead	MET-W	UG/L								
7439-95-4	Magnesium	MET-W	UG/L								
7439-96-5	Manganese	MET-W	UG/L	51.9		523		243		15	U
7440-02-0	Nickel	MET-W	UG/L								
9/7/7440	Potassium	MET-W	UG/L								
7782-49-2	Selenium	MET-W	UG/L								
7440-22-4	Silver	MET-W	UG/L								
7440-23-5	Sodium	MET-W	UG/L								
7440-28-0	Thallium	MET-W	UG/L								
7440-62-2	Vanadium	MET-W	UG/L								
7440-66-6	Zinc	MET-W	UG/L								
4-MEE	**Methane, Ethane, Ethene**										
74-82-8	Methane	RSKSOP147	ug/l	2	U	2.9		2	U	2	U
74-84-0	Ethane	RSKSOP147	ug/l	2	U	2	U	2	U	2	U
74-85-1	Ethene	RSKSOP147	ug/l	2	U	2	U	2	U	2	U
5-Wetchem	**Additional Parameters**										
7727-37-9	NITROGEN	MCAWW353-2	mg/L	4.4		5.1		4.4		4.2	
NH3	NITROGEN, AMMONIA	MCAWW350-1	mg/L								
ALK	Alkalinity, Total (AS CaCO3)	SM2320	mg/L	110		79		90		96	
18496-25-8	SULFIDE	MCAWW376-1	mg/L	0.01	U	0.01	U	0.01	U	0.01	U
SO4	SULFATE	MCAWW375-	mg/L	61		25		50		14	
FE	Ferrous Iron	HACH8146	mg/L								

			Sample Code	MW-124I-Y7		MW-124S-Y7		MW-125I-Y7		MW-125S-Y7	
			Sample Name								
			Sample Date	10/18/2011		10/18/2011		10/18/2011		10/18/2011	
Cas Rn	Chemical Name	Analytic Method	Unit \\ Depth	53.5 to 63.5 ft. bgs		18 to 33 ft. bgs		48 to 58 ft. bgs		6 to 21 ft. bgs	
(Group Code)	**(Group Description)**										
1-GWMW-VOA	**Volatile Organic Compounds**										
75-71-8	Dichlorodifluoromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
74-87-3	Chloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-01-4	Vinyl Chloride	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
74-83-9	Bromomethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-00-3	Chloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-69-4	Trichlorofluoromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-35-4	1,1-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	UJ	0.5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-15-0	Carbon Disulfide	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
67-64-1	Acetone	TVOA	ug/L	5	U	5	U	5	U	5	U
79-20-9	Methyl Acetate	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-09-2	Methylene Chloride	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
156-60-5	trans-1,2-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	UJ	0.5	U
1634-04-4	Methyl Tert-Butyl Ether	TVOA	ug/L	0.5	U	0.5	U	0.24	J	0.5	U
75-34-3	1,1-Dichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	UJ	0.5	U
156-59-2	cis-1,2-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	UJ	0.5	U
78-93-3	2-Butanone	TVOA	ug/L	5	U	5	U	5	U	5	U
74-97-5	CHLOROBROMOMETHANE	TVOA	ug/L	0.5	U	0.5	U	0.5	UJ	0.5	U
67-66-3	Chloroform	TVOA	ug/L	0.5	U	0.5	U	0.5	UJ	0.5	U
71-55-6	1,1,1-Trichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
110-82-7	Cyclohexane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
56-23-5	Carbon Tetrachloride	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
71-43-2	Benzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
107-06-2	1,2-Dichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
79-01-6	Trichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
78-87-5	1,2-Dichloropropane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-27-4	Bromodichloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
10061-01-5	cis-1,3-Dichloropropene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
108-10-1	4-Methyl-2-pentanone	TVOA	ug/L	5	U	5	U	5	U	5	U
108-88-3	Toluene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
10061-02-6	Trans-1,3-Dichloropropene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
79-00-5	1,1,2-Trichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
127-18-4	Tetrachloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
108-87-2	Metylcyclohexane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
124-48-1	Dibromochloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	UJ	0.5	U
106-93-4	1,2-Dibromoethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
591-78-6	2-Hexanone	TVOA	ug/L	5	U	5	U	5	U	5	U

Cas Rn	Chemical Name	Analytic Method	Sample Code / Sample Name / Sample Date / Unit \\ Depth	MW-124I-Y7 10/18/2011 53.5 to 63.5 ft. bgs		MW-124S-Y7 10/18/2011 18 to 33 ft. bgs		MW-125I-Y7 10/18/2011 48 to 58 ft. bgs		MW-125S-Y7 10/18/2011 6 to 21 ft. bgs	
108-90-7	Chlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
100-41-4	Ethylbenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
179601-23-1	m,p-Xylene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
95-47-6	O-XYLENE	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
100-42-5	Styrene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-25-2	Bromoform	TVOA	ug/L	0.5	U	0.5	U	0.5	UJ	0.5	U
98-82-8	Isopropylbenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
541-73-1	1,3-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
106-46-7	1,4-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
95-50-1	1,2-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
96-12-8	1,2-Dibromo-3-chloropropane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
120-82-1	1,2,4-Trichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
87-61-6	1,2,3-TRICHLOROBENZENE	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
79-34-5	1,1,2,2-Tetrachloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
2-GWMW-SVOA	**Semi-Volatile Organic Compounds**										
100-52-7	Benzaldehyde	SVOA-LOW	ug/L	5	UJ	5	UJ	5	UJ	5.1	UJ
108-95-2	Phenol	SVOA-LOW	ug/L	5	UJ	5	UJ	5	UJ	5.1	UJ
111-44-4	bis(2-Chloroethyl)ether	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
95-57-8	2-Chlorophenol	SVOA-LOW	ug/L	5	UJ	5	U	5	U	5.1	U
95-48-7	2-Methylphenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
108-60-1	2,2'-oxybis(1-Chloropropane)	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
98-86-2	Acetophenone	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
106-44-5	4-Methylphenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
621-64-7	N-Nitroso-di-n-propylamine	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
67-72-1	Hexachloroethane	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
98-95-3	Nitrobenzene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
78-59-1	Isophorone	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
88-75-5	2-Nitrophenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
105-67-9	2,4-Dimethylphenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
111-91-1	bis(2-Chloroethoxy)methane	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
120-83-2	2,4-Dichlorophenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
91-20-3	Naphthalene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
106-47-8	4-Chloroaniline	SVOA-LOW	ug/L	5	U	5	U	5	UJ	5.1	UJ
87-68-3	Hexachlorobutadiene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
105-60-2	Caprolactam	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
59-50-7	4-Chloro-3-methylphenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
91-57-6	2-Methylnaphthalene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
95-94-3	1,2,4,5-TETRACHLOROBENZENE	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U

Cas Rn	Chemical Name	Analytic Method	Sample Code / Sample Name / Sample Date / Unit \\ Depth	MW-124I-Y7 10/18/2011 53.5 to 63.5 ft. bgs		MW-124S-Y7 10/18/2011 18 to 33 ft. bgs		MW-125I-Y7 10/18/2011 48 to 58 ft. bgs		MW-125S-Y7 10/18/2011 6 to 21 ft. bgs	
77-47-4	Hexachlorocyclopentadiene	SVOA-LOW	ug/L	5	U	5	U	5	UJ	5.1	UJ
88-06-2	2,4,6-Trichlorophenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
95-95-4	2,4,5-Trichlorophenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
92-52-4	1,1'Biphenyl	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
91-58-7	2-Chloronaphthalene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
88-74-4	2-Nitroaniline	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
131-11-3	Dimethylphthalate	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
208-96-8	Acenaphthylene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
606-20-2	2,6-Dinitrotoluene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
99-09-2	3-Nitroaniline	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
83-32-9	Acenaphthene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
51-28-5	2,4-Dinitrophenol	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
100-02-7	4-Nitrophenol	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
132-64-9	Dibenzofuran	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
121-14-2	2,4-Dinitrotoluene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
86-73-7	Fluorene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
84-66-2	Diethylphthalate	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
7005-72-3	4-Chlorophenyl-phenylether	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
100-01-6	4-Nitroaniline	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
534-52-1	4,6-Dinitro-2-methylphenol	SVOA-LOW	ug/L	10	U	10	U	10	U	10	U
86-30-6	N-Nitrosodiphenylamine	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
101-55-3	4-Bromophenyl-phenylether	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
118-74-1	Hexachlorobenzene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
1912-24-9	Atrazine	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
87-86-5	Pentachlorophenol	SVOA-LOW	ug/L	10	U	10	U	10	U	10	U
85-01-8	Phenanthrene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
120-12-7	Anthracene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
86-74-8	Carbazole	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
84-74-2	Di-n-butylphthalate	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
206-44-0	Fluoranthene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
129-00-0	Pyrene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
85-68-7	Butylbenzylphthalate	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
91-94-1	3,3'-Dichlorobenzidine	SVOA-LOW	ug/L	5	U	5	U	5	UJ	5.1	UJ
56-55-3	Benzo(a)anthracene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
218-01-9	Chrysene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
117-81-7	bis(2-Ethylhexyl)phthalate	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
117-84-0	Di-n-octyl phthalate	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
205-99-2	Benzo(b)fluoranthene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
207-08-9	Benzo(k)fluoranthene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U

Cas Rn	Chemical Name	Analytic Method	Sample Code Sample Name Sample Date Unit \\ Depth	MW-124I-Y7 10/18/2011 53.5 to 63.5 ft. bgs		MW-124S-Y7 10/18/2011 18 to 33 ft. bgs		MW-125I-Y7 10/18/2011 48 to 58 ft. bgs		MW-125S-Y7 10/18/2011 6 to 21 ft. bgs	
50-32-8	Benzo(a)pyrene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
193-39-5	Indeno(1,2,3-cd)pyrene	SVOA-LOW	ug/L	5	UJ	5	U	5	U	5.1	U
53-70-3	Dibenz(a,h)anthracene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
191-24-2	Benzo(g,h,i)perylene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
58-90-2	CHLOROPHENOLS	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
3-MET-W	**Inorganic Analytes**										
7429-90-5	Aluminum	MET-W	UG/L								
7440-36-0	Antimony	MET-W	UG/L								
7440-38-2	Arsenic	MET-W	UG/L								
7440-39-3	Barium	MET-W	UG/L								
7440-41-7	Beryllium	MET-W	UG/L								
7440-43-9	Cadmium	MET-W	UG/L								
7440-70-2	Calcium	MET-W	UG/L								
7440-47-3	Chromium	MET-W	UG/L								
7440-48-4	Cobalt	MET-W	UG/L								
7440-50-8	Copper	MET-W	UG/L								
7439-89-6	Iron	MET-W	UG/L	977		8520		159		1100	
7439-92-1	Lead	MET-W	UG/L								
7439-95-4	Magnesium	MET-W	UG/L								
7439-96-5	Manganese	MET-W	UG/L	48		253		15	U	31	
7440-02-0	Nickel	MET-W	UG/L								
9/7/7440	Potassium	MET-W	UG/L								
7782-49-2	Selenium	MET-W	UG/L								
7440-22-4	Silver	MET-W	UG/L								
7440-23-5	Sodium	MET-W	UG/L								
7440-28-0	Thallium	MET-W	UG/L								
7440-62-2	Vanadium	MET-W	UG/L								
7440-66-6	Zinc	MET-W	UG/L								
4-MEE	**Methane, Ethane, Ethene**										
74-82-8	Methane	RSKSOP147	ug/l	2	U	2	U	2	U	2	U
74-84-0	Ethane	RSKSOP147	ug/l	2	U	2	U	2	U	2	U
74-85-1	Ethene	RSKSOP147	ug/l	2	U	2	U	2	U	2	U
5-Wetchem	**Additional Parameters**										
7727-37-9	NITROGEN	MCAWW353-2	mg/L	4.6		6		1.7		3.2	
NH3	NITROGEN, AMMONIA	MCAWW350-1	mg/L								
ALK	Alkalinity, Total (AS CaCO3)	SM2320	mg/L	62		100		160		45	
18496-25-8	SULFIDE	MCAWW376-1	mg/L	0.01	U	0.01	U	0.01	U	0.01	U
SO4	SULFATE	MCAWW375-	mg/L	29		52		23		29	
FE	Ferrous Iron	HACH8146	mg/L								

Cas Rn	Chemical Name	Analytic Method	Sample Code Sample Name Sample Date Unit \\ Depth	MW-126S-Y7 10/19/2011 13.5 to 28.5 ft. bgs		MW-127S-Y7 10/25/2011 20.5 to 35.5 ft. bgs		MW-12RS-Y7 10/24/2011 15.5 to 30.5 ft. bgs		MW-1RS-Y7 10/24/2011 19 to 34 ft. bgs	
(Group Code)	**(Group Description)**										
1-GWMW-VOA	**Volatile Organic Compounds**										
75-71-8	Dichlorodifluoromethane	TVOA	ug/L	0.5	UJ	0.5	U	0.5	U	0.5	U
74-87-3	Chloromethane	TVOA	ug/L	0.5	UJ	0.5	U	0.5	U	0.5	U
75-01-4	Vinyl Chloride	TVOA	ug/L	0.5	UJ	0.5	U	0.5	U	0.5	U
74-83-9	Bromomethane	TVOA	ug/L	0.5	UJ	0.5	U	0.5	U	0.5	U
75-00-3	Chloroethane	TVOA	ug/L	0.5	UJ	0.5	U	0.5	U	0.5	U
75-69-4	Trichlorofluoromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-35-4	1,1-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-15-0	Carbon Disulfide	TVOA	ug/L	0.5	UJ	0.5	U	0.5	U	0.5	U
67-64-1	Acetone	TVOA	ug/L	5	U	5	U	5	U	5	U
79-20-9	Methyl Acetate	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-09-2	Methylene Chloride	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
156-60-5	trans-1,2-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
1634-04-4	Methyl Tert-Butyl Ether	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-34-3	1,1-Dichloroethane	TVOA	ug/L	0.5	UJ	0.5	U	0.5	U	0.5	U
156-59-2	cis-1,2-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
78-93-3	2-Butanone	TVOA	ug/L	5	U	5	U	5	U	5	U
74-97-5	CHLOROBROMOMETHANE	TVOA	ug/L	0.5	UJ	0.5	U	0.5	U	0.5	U
67-66-3	Chloroform	TVOA	ug/L	0.5	UJ	2.2		0.5	U	0.5	U
71-55-6	1,1,1-Trichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
110-82-7	Cyclohexane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
56-23-5	Carbon Tetrachloride	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
71-43-2	Benzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
107-06-2	1,2-Dichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
79-01-6	Trichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
78-87-5	1,2-Dichloropropane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-27-4	Bromodichloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
10061-01-5	cis-1,3-Dichloropropene	TVOA	ug/L	0.5	U	0.5	U	0.5	UJ	0.5	U
108-10-1	4-Methyl-2-pentanone	TVOA	ug/L	5	U	5	U	5	U	5	U
108-88-3	Toluene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
10061-02-6	Trans-1,3-Dichloropropene	TVOA	ug/L	0.5	U	0.5	U	0.5	UJ	0.5	U
79-00-5	1,1,2-Trichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	UJ	0.5	U
127-18-4	Tetrachloroethene	TVOA	ug/L	0.5	U	77		0.5	U	0.5	U
108-87-2	Metylcyclohexane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
124-48-1	Dibromochloromethane	TVOA	ug/L	0.5	UJ	0.5	U	0.5	U	0.5	U
106-93-4	1,2-Dibromoethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
591-78-6	2-Hexanone	TVOA	ug/L	5	U	5	U	5	U	5	U

Cas Rn	Chemical Name	Analytic Method	Sample Code / Sample Name / Sample Date / Unit \\ Depth	MW-126S-Y7 10/19/2011 13.5 to 28.5 ft. bgs		MW-127S-Y7 10/25/2011 20.5 to 35.5 ft. bgs		MW-12RS-Y7 10/24/2011 15.5 to 30.5 ft. bgs		MW-1RS-Y7 10/24/2011 19 to 34 ft. bgs	
108-90-7	Chlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
100-41-4	Ethylbenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
179601-23-1	m,p-Xylene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
95-47-6	O-XYLENE	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
100-42-5	Styrene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-25-2	Bromoform	TVOA	ug/L	0.5	UJ	0.5	U	0.5	U	0.5	U
98-82-8	Isopropylbenzene	TVOA	ug/L	0.5	U	0.5	U	0.24	J	0.5	U
541-73-1	1,3-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
106-46-7	1,4-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
95-50-1	1,2-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
96-12-8	1,2-Dibromo-3-chloropropane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
120-82-1	1,2,4-Trichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
87-61-6	1,2,3-TRICHLOROBENZENE	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
79-34-5	1,1,2,2-Tetrachloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
2-GWMW-SVOA	**Semi-Volatile Organic Compounds**										
100-52-7	Benzaldehyde	SVOA-LOW	ug/L	5	UJ	5	UJ	5.1	UJ	5.1	UJ
108-95-2	Phenol	SVOA-LOW	ug/L	5	UJ	5	UJ	5.1	UJ	5.1	UJ
111-44-4	bis(2-Chloroethyl)ether	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
95-57-8	2-Chlorophenol	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
95-48-7	2-Methylphenol	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
108-60-1	2,2'-oxybis(1-Chloropropane)	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
98-86-2	Acetophenone	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
106-44-5	4-Methylphenol	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
621-64-7	N-Nitroso-di-n-propylamine	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
67-72-1	Hexachloroethane	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
98-95-3	Nitrobenzene	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
78-59-1	Isophorone	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
88-75-5	2-Nitrophenol	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
105-67-9	2,4-Dimethylphenol	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
111-91-1	bis(2-Chloroethoxy)methane	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
120-83-2	2,4-Dichlorophenol	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
91-20-3	Naphthalene	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
106-47-8	4-Chloroaniline	SVOA-LOW	ug/L	5	U	5	UJ	5.1	U	5.1	UJ
87-68-3	Hexachlorobutadiene	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
105-60-2	Caprolactam	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
59-50-7	4-Chloro-3-methylphenol	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
91-57-6	2-Methylnaphthalene	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
95-94-3	1,2,4,5-TETRACHLOROBENZENE	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U

			Sample Code	MW-126S-Y7		MW-127S-Y7		MW-12RS-Y7		MW-1RS-Y7	
			Sample Name								
			Sample Date	10/19/2011		10/25/2011		10/24/2011		10/24/2011	
Cas Rn	Chemical Name	Analytic Method	Unit \\ Depth	13.5 to 28.5 ft. bgs		20.5 to 35.5 ft. bgs		15.5 to 30.5 ft. bgs		19 to 34 ft. bgs	
77-47-4	Hexachlorocyclopentadiene	SVOA-LOW	ug/L	5	U	5	UJ	5.1	U	5.1	UJ
88-06-2	2,4,6-Trichlorophenol	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
95-95-4	2,4,5-Trichlorophenol	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
92-52-4	1,1'Biphenyl	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
91-58-7	2-Chloronaphthalene	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
88-74-4	2-Nitroaniline	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
131-11-3	Dimethylphthalate	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
208-96-8	Acenaphthylene	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
606-20-2	2,6-Dinitrotoluene	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
99-09-2	3-Nitroaniline	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
83-32-9	Acenaphthene	SVOA-LOW	ug/L	5	U	5	U	8.7		5.1	U
51-28-5	2,4-Dinitrophenol	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
100-02-7	4-Nitrophenol	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
132-64-9	Dibenzofuran	SVOA-LOW	ug/L	5	U	5	U	16		5.1	U
121-14-2	2,4-Dinitrotoluene	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
86-73-7	Fluorene	SVOA-LOW	ug/L	5	U	5	U	4.3	J	5.1	U
84-66-2	Diethylphthalate	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
7005-72-3	4-Chlorophenyl-phenylether	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
100-01-6	4-Nitroaniline	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
534-52-1	4,6-Dinitro-2-methylphenol	SVOA-LOW	ug/L	10	U	10	U	10	U	10	U
86-30-6	N-Nitrosodiphenylamine	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
101-55-3	4-Bromophenyl-phenylether	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
118-74-1	Hexachlorobenzene	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
1912-24-9	Atrazine	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
87-86-5	Pentachlorophenol	SVOA-LOW	ug/L	10	U	10	U	10	U	10	U
85-01-8	Phenanthrene	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
120-12-7	Anthracene	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
86-74-8	Carbazole	SVOA-LOW	ug/L	5	U	5	U	13		5.1	U
84-74-2	Di-n-butylphthalate	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
206-44-0	Fluoranthene	SVOA-LOW	ug/L	5	U	5	U	4.4	J	5.1	U
129-00-0	Pyrene	SVOA-LOW	ug/L	5	U	5	U	2.4	J	5.1	U
85-68-7	Butylbenzylphthalate	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
91-94-1	3,3'-Dichlorobenzidine	SVOA-LOW	ug/L	5	U	5	UJ	5.1	U	5.1	UJ
56-55-3	Benzo(a)anthracene	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
218-01-9	Chrysene	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
117-81-7	bis(2-Ethylhexyl)phthalate	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
117-84-0	Di-n-octyl phthalate	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
205-99-2	Benzo(b)fluoranthene	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
207-08-9	Benzo(k)fluoranthene	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U

Cas Rn	Chemical Name	Analytic Method	Sample Code Sample Name Sample Date Unit \\ Depth	MW-126S-Y7 10/19/2011 13.5 to 28.5 ft. bgs		MW-127S-Y7 10/25/2011 20.5 to 35.5 ft. bgs		MW-12RS-Y7 10/24/2011 15.5 to 30.5 ft. bgs		MW-1RS-Y7 10/24/2011 19 to 34 ft. bgs	
50-32-8	Benzo(a)pyrene	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
193-39-5	Indeno(1,2,3-cd)pyrene	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
53-70-3	Dibenz(a,h)anthracene	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
191-24-2	Benzo(g,h,i)perylene	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
58-90-2	CHLOROPHENOLS	SVOA-LOW	ug/L	5	U	5	U	5.1	U	5.1	U
3-MET-W	**Inorganic Analytes**										
7429-90-5	Aluminum	MET-W	UG/L								
7440-36-0	Antimony	MET-W	UG/L								
7440-38-2	Arsenic	MET-W	UG/L								
7440-39-3	Barium	MET-W	UG/L								
7440-41-7	Beryllium	MET-W	UG/L								
7440-43-9	Cadmium	MET-W	UG/L								
7440-70-2	Calcium	MET-W	UG/L								
7440-47-3	Chromium	MET-W	UG/L								
7440-48-4	Cobalt	MET-W	UG/L								
7440-50-8	Copper	MET-W	UG/L								
7439-89-6	Iron	MET-W	UG/L	1450		4150		6490		1660	
7439-92-1	Lead	MET-W	UG/L								
7439-95-4	Magnesium	MET-W	UG/L								
7439-96-5	Manganese	MET-W	UG/L	18		135		6650		24.2	
7440-02-0	Nickel	MET-W	UG/L								
9/7/7440	Potassium	MET-W	UG/L								
7782-49-2	Selenium	MET-W	UG/L								
7440-22-4	Silver	MET-W	UG/L								
7440-23-5	Sodium	MET-W	UG/L								
7440-28-0	Thallium	MET-W	UG/L								
7440-62-2	Vanadium	MET-W	UG/L								
7440-66-6	Zinc	MET-W	UG/L								
4-MEE	**Methane, Ethane, Ethene**										
74-82-8	Methane	RSKSOP147	ug/l	2	U	2	U	64		2	U
74-84-0	Ethane	RSKSOP147	ug/l	2	U	2	U	2	U	2	U
74-85-1	Ethene	RSKSOP147	ug/l	2	U	2	U	2	U	2	U
5-Wetchem	**Additional Parameters**										
7727-37-9	NITROGEN	MCAWW353-2	mg/L	4.5		4.4		0.25		3.3	
NH3	NITROGEN, AMMONIA	MCAWW350-1	mg/L								
ALK	Alkalinity, Total (AS CaCO3)	SM2320	mg/L	34		47		170		170	
18496-25-8	SULFIDE	MCAWW376-1	mg/L	0.01	U	0.01	U	0.01	U	0.01	U
SO4	SULFATE	MCAWW375-	mg/L	60		30		38		67	
FE	Ferrous Iron	HACH8146	mg/L								

Cas Rn	Chemical Name	Analytic Method	Sample Code / Sample Name / Sample Date / Unit \\ Depth	MW-2RD-Y7 10/21/2011 188 to 198 ft. bgs		MW-2RI-Y7 10/21/2011 64 to 74 ft. bgs		MW-2RS-Y7 10/21/2011 17 to 32 ft. bgs		MW-5I-Y7 10/25/2011 45 to 55 ft. bgs	
(Group Code)	**(Group Description)**										
1-GWMW-VOA	**Volatile Organic Compounds**										
75-71-8	Dichlorodifluoromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
74-87-3	Chloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-01-4	Vinyl Chloride	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
74-83-9	Bromomethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-00-3	Chloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-69-4	Trichlorofluoromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-35-4	1,1-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-15-0	Carbon Disulfide	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.22	J
67-64-1	Acetone	TVOA	ug/L	5	U	5	U	5	U	5	U
79-20-9	Methyl Acetate	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-09-2	Methylene Chloride	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
156-60-5	trans-1,2-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
1634-04-4	Methyl Tert-Butyl Ether	TVOA	ug/L	0.5	U	0.5	U	0.19	J	0.5	U
75-34-3	1,1-Dichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
156-59-2	cis-1,2-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
78-93-3	2-Butanone	TVOA	ug/L	5	U	5	U	5	U	5	U
74-97-5	CHLOROBROMOMETHANE	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
67-66-3	Chloroform	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
71-55-6	1,1,1-Trichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
110-82-7	Cyclohexane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
56-23-5	Carbon Tetrachloride	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
71-43-2	Benzene	TVOA	ug/L	1.3		1.9		62		0.5	U
107-06-2	1,2-Dichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
79-01-6	Trichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
78-87-5	1,2-Dichloropropane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-27-4	Bromodichloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
10061-01-5	cis-1,3-Dichloropropene	TVOA	ug/L	0.5	U	0.5	UJ	0.5	U	0.5	U
108-10-1	4-Methyl-2-pentanone	TVOA	ug/L	5	U	5	U	5	U	5	U
108-88-3	Toluene	TVOA	ug/L	0.5	U	4.3		49		3.6	
10061-02-6	Trans-1,3-Dichloropropene	TVOA	ug/L	0.5	U	0.5	UJ	0.5	U	0.5	U
79-00-5	1,1,2-Trichloroethane	TVOA	ug/L	0.5	U	0.5	UJ	0.5	U	0.5	U
127-18-4	Tetrachloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
108-87-2	Metylcyclohexane	TVOA	ug/L	0.5	U	0.28	J	0.33	J	0.5	U
124-48-1	Dibromochloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
106-93-4	1,2-Dibromoethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
591-78-6	2-Hexanone	TVOA	ug/L	5	U	5	U	5	U	5	U

Cas Rn	Chemical Name	Analytic Method	Sample Code Sample Name Sample Date Unit \\ Depth	MW-2RD-Y7 10/21/2011 188 to 198 ft. bgs		MW-2RI-Y7 10/21/2011 64 to 74 ft. bgs		MW-2RS-Y7 10/21/2011 17 to 32 ft. bgs		MW-5I-Y7 10/25/2011 45 to 55 ft. bgs	
108-90-7	Chlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
100-41-4	Ethylbenzene	TVOA	ug/L	4.9		54		210		24	
179601-23-1	m,p-Xylene	TVOA	ug/L	0.5	U	61		240		32	
95-47-6	O-XYLENE	TVOA	ug/L	3.8		43		190		28	
100-42-5	Styrene	TVOA	ug/L	0.5	U	0.5	U	23		0.5	U
75-25-2	Bromoform	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
98-82-8	Isopropylbenzene	TVOA	ug/L	3.1		17		26		6.1	
541-73-1	1,3-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
106-46-7	1,4-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
95-50-1	1,2-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
96-12-8	1,2-Dibromo-3-chloropropane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
120-82-1	1,2,4-Trichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
87-61-6	1,2,3-TRICHLOROBENZENE	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
79-34-5	1,1,2,2-Tetrachloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
2-GWMW-SVOA	**Semi-Volatile Organic Compounds**										
100-52-7	Benzaldehyde	SVOA-LOW	ug/L	5.1	UJ	5	UJ	5	UJ	5.1	UJ
108-95-2	Phenol	SVOA-LOW	ug/L	5.1	UJ	5	UJ	5	UJ	5.1	UJ
111-44-4	bis(2-Chloroethyl)ether	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
95-57-8	2-Chlorophenol	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	UJ
95-48-7	2-Methylphenol	SVOA-LOW	ug/L	5.1	U	5	U	7		5.1	U
108-60-1	2,2'-oxybis(1-Chloropropane)	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
98-86-2	Acetophenone	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
106-44-5	4-Methylphenol	SVOA-LOW	ug/L	5.1	U	5	U	8.6		5.1	U
621-64-7	N-Nitroso-di-n-propylamine	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
67-72-1	Hexachloroethane	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
98-95-3	Nitrobenzene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
78-59-1	Isophorone	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
88-75-5	2-Nitrophenol	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
105-67-9	2,4-Dimethylphenol	SVOA-LOW	ug/L	5.1	U	5	U	35		5.1	U
111-91-1	bis(2-Chloroethoxy)methane	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
120-83-2	2,4-Dichlorophenol	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
91-20-3	Naphthalene	SVOA-LOW	ug/L	29		5700		11000		4100	
106-47-8	4-Chloroaniline	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
87-68-3	Hexachlorobutadiene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
105-60-2	Caprolactam	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
59-50-7	4-Chloro-3-methylphenol	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
91-57-6	2-Methylnaphthalene	SVOA-LOW	ug/L	5.1	U	220		200		440	
95-94-3	1,2,4,5-TETRACHLOROBENZENE	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U

			Sample Code	MW-2RD-Y7		MW-2RI-Y7		MW-2RS-Y7		MW-5I-Y7	
			Sample Name								
			Sample Date	10/21/2011		10/21/2011		10/21/2011		10/25/2011	
Cas Rn	Chemical Name	Analytic Method	Unit \\ Depth	188 to 198 ft. bgs		64 to 74 ft. bgs		17 to 32 ft. bgs		45 to 55 ft. bgs	
77-47-4	Hexachlorocyclopentadiene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
88-06-2	2,4,6-Trichlorophenol	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
95-95-4	2,4,5-Trichlorophenol	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
92-52-4	1,1'Biphenyl	SVOA-LOW	ug/L	19		140		150		45	
91-58-7	2-Chloronaphthalene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
88-74-4	2-Nitroaniline	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
131-11-3	Dimethylphthalate	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
208-96-8	Acenaphthylene	SVOA-LOW	ug/L	5.1	U	4.4	J	13		4.4	J
606-20-2	2,6-Dinitrotoluene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
99-09-2	3-Nitroaniline	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
83-32-9	Acenaphthene	SVOA-LOW	ug/L	31		380		460		200	
51-28-5	2,4-Dinitrophenol	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
100-02-7	4-Nitrophenol	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
132-64-9	Dibenzofuran	SVOA-LOW	ug/L	34		330		330		160	
121-14-2	2,4-Dinitrotoluene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
86-73-7	Fluorene	SVOA-LOW	ug/L	16		220		210		130	
84-66-2	Diethylphthalate	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
7005-72-3	4-Chlorophenyl-phenylether	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
100-01-6	4-Nitroaniline	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
534-52-1	4,6-Dinitro-2-methylphenol	SVOA-LOW	ug/L	10	U	10	U	10	U	10	U
86-30-6	N-Nitrosodiphenylamine	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
101-55-3	4-Bromophenyl-phenylether	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
118-74-1	Hexachlorobenzene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
1912-24-9	Atrazine	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
87-86-5	Pentachlorophenol	SVOA-LOW	ug/L	10	U	10	U	10	U	10	U
85-01-8	Phenanthrene	SVOA-LOW	ug/L	13		250		200		86	
120-12-7	Anthracene	SVOA-LOW	ug/L	5.1	U	18		11		8.4	
86-74-8	Carbazole	SVOA-LOW	ug/L	42		250		260		78	
84-74-2	Di-n-butylphthalate	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
206-44-0	Fluoranthene	SVOA-LOW	ug/L	5.1	U	24		13		41	
129-00-0	Pyrene	SVOA-LOW	ug/L	5.1	U	13		7.1		29	
85-68-7	Butylbenzylphthalate	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
91-94-1	3,3'-Dichlorobenzidine	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
56-55-3	Benzo(a)anthracene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	12	
218-01-9	Chrysene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	10	
117-81-7	bis(2-Ethylhexyl)phthalate	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
117-84-0	Di-n-octyl phthalate	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
205-99-2	Benzo(b)fluoranthene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	10	
207-08-9	Benzo(k)fluoranthene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	4.2	J

Cas Rn	Chemical Name	Analytic Method	Sample Code / Sample Name / Sample Date / Unit \\ Depth	MW-2RD-Y7 10/21/2011 188 to 198 ft. bgs		MW-2RI-Y7 10/21/2011 64 to 74 ft. bgs		MW-2RS-Y7 10/21/2011 17 to 32 ft. bgs		MW-5I-Y7 10/25/2011 45 to 55 ft. bgs	
50-32-8	Benzo(a)pyrene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	8	
193-39-5	Indeno(1,2,3-cd)pyrene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	4.6	J
53-70-3	Dibenz(a,h)anthracene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
191-24-2	Benzo(g,h,i)perylene	SVOA-LOW	ug/L	5.1	U	5	U	5	U	3.4	J
58-90-2	CHLOROPHENOLS	SVOA-LOW	ug/L	5.1	U	5	U	5	U	5.1	U
3-MET-W	**Inorganic Analytes**										
7429-90-5	Aluminum	MET-W	UG/L								
7440-36-0	Antimony	MET-W	UG/L								
7440-38-2	Arsenic	MET-W	UG/L								
7440-39-3	Barium	MET-W	UG/L								
7440-41-7	Beryllium	MET-W	UG/L								
7440-43-9	Cadmium	MET-W	UG/L								
7440-70-2	Calcium	MET-W	UG/L								
7440-47-3	Chromium	MET-W	UG/L								
7440-48-4	Cobalt	MET-W	UG/L								
7440-50-8	Copper	MET-W	UG/L								
7439-89-6	Iron	MET-W	UG/L	307		894		35900		1740	
7439-92-1	Lead	MET-W	UG/L								
7439-95-4	Magnesium	MET-W	UG/L								
7439-96-5	Manganese	MET-W	UG/L	618		3320		18400		124	
7440-02-0	Nickel	MET-W	UG/L								
9/7/7440	Potassium	MET-W	UG/L								
7782-49-2	Selenium	MET-W	UG/L								
7440-22-4	Silver	MET-W	UG/L								
7440-23-5	Sodium	MET-W	UG/L								
7440-28-0	Thallium	MET-W	UG/L								
7440-62-2	Vanadium	MET-W	UG/L								
7440-66-6	Zinc	MET-W	UG/L								
4-MEE	**Methane, Ethane, Ethene**										
74-82-8	Methane	RSKSOP147	ug/l	2.7	L	11		19		9.5	
74-84-0	Ethane	RSKSOP147	ug/l	2	U	2	U	2	U	2	U
74-85-1	Ethene	RSKSOP147	ug/l	2	U	2	U	2	U	2	U
5-Wetchem	**Additional Parameters**										
7727-37-9	NITROGEN	MCAWW353-2	mg/L	0.05	U	0.05	U	0.05	U	0.05	U
NH3	NITROGEN, AMMONIA	MCAWW350-1	mg/L								
ALK	Alkalinity, Total (AS CaCO3)	SM2320	mg/L	96		160		240		120	
18496-25-8	SULFIDE	MCAWW376-1	mg/L	1.2	L	0.067		0.2		0.49	
SO4	SULFATE	MCAWW375-	mg/L	110		1	U	210		1.9	
FE	Ferrous Iron	HACH8146	mg/L								

Cas Rn	Chemical Name	Analytic Method	Sample Code Sample Name Sample Date Unit \\ Depth	MW-602S-Y7 10/21/2011 17 to 32 ft. bgs		MW-614D-Y7 10/17/2011 168 to 178 ft. bgs		MW-6S-Y7 10/25/2011 14 to 24 ft. bgs		MW-7S-Y7 10/25/2011 14.5 to 24.5 ft. bgs	
(Group Code)	**(Group Description)**										
1-GWMW-VOA	**Volatile Organic Compounds**										
75-71-8	Dichlorodifluoromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
74-87-3	Chloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-01-4	Vinyl Chloride	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
74-83-9	Bromomethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-00-3	Chloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-69-4	Trichlorofluoromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-35-4	1,1-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	UJ	0.5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-15-0	Carbon Disulfide	TVOA	ug/L	0.5	U	0.5	U	0.27	J	0.23	J
67-64-1	Acetone	TVOA	ug/L	5	U	5	U	5	U	5	U
79-20-9	Methyl Acetate	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-09-2	Methylene Chloride	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
156-60-5	trans-1,2-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	UJ	0.5	U
1634-04-4	Methyl Tert-Butyl Ether	TVOA	ug/L	0.17	J	0.5	U	0.5	U	0.5	U
75-34-3	1,1-Dichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
156-59-2	cis-1,2-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	UJ	0.5	U
78-93-3	2-Butanone	TVOA	ug/L	5	U	5	U	5	U	5	U
74-97-5	CHLOROBROMOMETHANE	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
67-66-3	Chloroform	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
71-55-6	1,1,1-Trichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
110-82-7	Cyclohexane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
56-23-5	Carbon Tetrachloride	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
71-43-2	Benzene	TVOA	ug/L	60		0.5	U	11		2.1	
107-06-2	1,2-Dichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
79-01-6	Trichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
78-87-5	1,2-Dichloropropane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-27-4	Bromodichloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
10061-01-5	cis-1,3-Dichloropropene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	UJ
108-10-1	4-Methyl-2-pentanone	TVOA	ug/L	5	U	5	U	5	U	5	U
108-88-3	Toluene	TVOA	ug/L	50		0.5	U	25		11	
10061-02-6	Trans-1,3-Dichloropropene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	UJ
79-00-5	1,1,2-Trichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	UJ
127-18-4	Tetrachloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
108-87-2	Metylcyclohexane	TVOA	ug/L	0.37	J	0.5	U	0.5	U	0.5	U
124-48-1	Dibromochloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
106-93-4	1,2-Dibromoethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
591-78-6	2-Hexanone	TVOA	ug/L	5	U	5	U	5	U	5	U

			Sample Code	MW-602S-Y7		MW-614D-Y7		MW-6S-Y7		MW-7S-Y7	
			Sample Name								
			Sample Date	10/21/2011		10/17/2011		10/25/2011		10/25/2011	
Cas Rn	Chemical Name	Analytic Method	Unit \\ Depth	17 to 32 ft. bgs		168 to 178 ft. bgs		14 to 24 ft. bgs		14.5 to 24.5 ft. bgs	
108-90-7	Chlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
100-41-4	Ethylbenzene	TVOA	ug/L	220		0.5	U	28		11	
179601-23-1	m,p-Xylene	TVOA	ug/L	250		0.5	U	42		23	
95-47-6	O-XYLENE	TVOA	ug/L	190		0.5	U	23		17	
100-42-5	Styrene	TVOA	ug/L	22		0.5	U	6.4		5.3	
75-25-2	Bromoform	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
98-82-8	Isopropylbenzene	TVOA	ug/L	27		0.5	U	3.9		0.86	
541-73-1	1,3-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
106-46-7	1,4-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
95-50-1	1,2-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
96-12-8	1,2-Dibromo-3-chloropropane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
120-82-1	1,2,4-Trichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
87-61-6	1,2,3-TRICHLOROBENZENE	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
79-34-5	1,1,2,2-Tetrachloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
2-GWMW-SVOA	**Semi-Volatile Organic Compounds**										
100-52-7	Benzaldehyde	SVOA-LOW	ug/L	5	UJ	5	UJ	5	UJ	5.1	UJ
108-95-2	Phenol	SVOA-LOW	ug/L	5	UJ	5	UJ	5	UJ	5.1	UJ
111-44-4	bis(2-Chloroethyl)ether	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
95-57-8	2-Chlorophenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
95-48-7	2-Methylphenol	SVOA-LOW	ug/L	6.6		5	U	17		5.1	U
108-60-1	2,2'-oxybis(1-Chloropropane)	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
98-86-2	Acetophenone	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
106-44-5	4-Methylphenol	SVOA-LOW	ug/L	8.1		5	U	7.2		5.1	U
621-64-7	N-Nitroso-di-n-propylamine	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
67-72-1	Hexachloroethane	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
98-95-3	Nitrobenzene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
78-59-1	Isophorone	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
88-75-5	2-Nitrophenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
105-67-9	2,4-Dimethylphenol	SVOA-LOW	ug/L	37		5	U	170		13	
111-91-1	bis(2-Chloroethoxy)methane	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
120-83-2	2,4-Dichlorophenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
91-20-3	Naphthalene	SVOA-LOW	ug/L	11000		5	U	5800		7200	
106-47-8	4-Chloroaniline	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
87-68-3	Hexachlorobutadiene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
105-60-2	Caprolactam	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
59-50-7	4-Chloro-3-methylphenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
91-57-6	2-Methylnaphthalene	SVOA-LOW	ug/L	200		5	U	450		270	
95-94-3	1,2,4,5-TETRACHLOROBENZENE	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U

			Sample Code	MW-602S-Y7		MW-614D-Y7		MW-6S-Y7		MW-7S-Y7	
			Sample Name								
			Sample Date	10/21/2011		10/17/2011		10/25/2011		10/25/2011	
Cas Rn	Chemical Name	Analytic Method	Unit \\ Depth	17 to 32 ft. bgs		168 to 178 ft. bgs		14 to 24 ft. bgs		14.5 to 24.5 ft. bgs	
77-47-4	Hexachlorocyclopentadiene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
88-06-2	2,4,6-Trichlorophenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
95-95-4	2,4,5-Trichlorophenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
92-52-4	1,1'Biphenyl	SVOA-LOW	ug/L	160		5	U	60		76	
91-58-7	2-Chloronaphthalene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
88-74-4	2-Nitroaniline	SVOA-LOW	ug/L	10	U	10	UJ	10	UJ	10	UJ
131-11-3	Dimethylphthalate	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
208-96-8	Acenaphthylene	SVOA-LOW	ug/L	15		5	U	38		80	
606-20-2	2,6-Dinitrotoluene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
99-09-2	3-Nitroaniline	SVOA-LOW	ug/L	10	U	10	UJ	10	UJ	10	UJ
83-32-9	Acenaphthene	SVOA-LOW	ug/L	480		5	U	300		430	
51-28-5	2,4-Dinitrophenol	SVOA-LOW	ug/L	10	U	10	UJ	10	UJ	10	UJ
100-02-7	4-Nitrophenol	SVOA-LOW	ug/L	10	U	10	UJ	10	UJ	10	UJ
132-64-9	Dibenzofuran	SVOA-LOW	ug/L	350		5	U	240		320	
121-14-2	2,4-Dinitrotoluene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
86-73-7	Fluorene	SVOA-LOW	ug/L	220		5	U	230		320	
84-66-2	Diethylphthalate	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
7005-72-3	4-Chlorophenyl-phenylether	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
100-01-6	4-Nitroaniline	SVOA-LOW	ug/L	10	U	10	UJ	10	UJ	10	UJ
534-52-1	4,6-Dinitro-2-methylphenol	SVOA-LOW	ug/L	10	U	10	U	10	U	10	U
86-30-6	N-Nitrosodiphenylamine	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
101-55-3	4-Bromophenyl-phenylether	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
118-74-1	Hexachlorobenzene	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
1912-24-9	Atrazine	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
87-86-5	Pentachlorophenol	SVOA-LOW	ug/L	10	U	10	U	10	U	10	U
85-01-8	Phenanthrene	SVOA-LOW	ug/L	210		5	U	430		640	
120-12-7	Anthracene	SVOA-LOW	ug/L	11		5	U	35		51	
86-74-8	Carbazole	SVOA-LOW	ug/L	280		5	U	170		180	
84-74-2	Di-n-butylphthalate	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
206-44-0	Fluoranthene	SVOA-LOW	ug/L	15		5	U	260		490	
129-00-0	Pyrene	SVOA-LOW	ug/L	8.1		5	U	190		340	
85-68-7	Butylbenzylphthalate	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
91-94-1	3,3'-Dichlorobenzidine	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
56-55-3	Benzo(a)anthracene	SVOA-LOW	ug/L	5	U	5	U	64		140	
218-01-9	Chrysene	SVOA-LOW	ug/L	5	U	5	U	53		76	
117-81-7	bis(2-Ethylhexyl)phthalate	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
117-84-0	Di-n-octyl phthalate	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
205-99-2	Benzo(b)fluoranthene	SVOA-LOW	ug/L	5	U	5	U	57		120	
207-08-9	Benzo(k)fluoranthene	SVOA-LOW	ug/L	5	U	5	U	19		27	

Federal Creosote Superfund Site, OU3
Groundwater Sample Data

Cas Rn	Chemical Name	Analytic Method	Sample Code / Sample Name / Sample Date / Unit \\ Depth	MW-602S-Y7 10/21/2011 17 to 32 ft. bgs		MW-614D-Y7 10/17/2011 168 to 178 ft. bgs		MW-6S-Y7 10/25/2011 14 to 24 ft. bgs		MW-7S-Y7 10/25/2011 14.5 to 24.5 ft. bgs	
50-32-8	Benzo(a)pyrene	SVOA-LOW	ug/L	5	U	5	U	40		64	
193-39-5	Indeno(1,2,3-cd)pyrene	SVOA-LOW	ug/L	5	U	5	U	28	J	45	J
53-70-3	Dibenz(a,h)anthracene	SVOA-LOW	ug/L	5	U	5	U	6		9	
191-24-2	Benzo(g,h,i)perylene	SVOA-LOW	ug/L	5	U	5	U	18		28	
58-90-2	CHLOROPHENOLS	SVOA-LOW	ug/L	5	U	5	U	5	U	5.1	U
3-MET-W	**Inorganic Analytes**										
7429-90-5	Aluminum	MET-W	UG/L								
7440-36-0	Antimony	MET-W	UG/L								
7440-38-2	Arsenic	MET-W	UG/L								
7440-39-3	Barium	MET-W	UG/L								
7440-41-7	Beryllium	MET-W	UG/L								
7440-43-9	Cadmium	MET-W	UG/L								
7440-70-2	Calcium	MET-W	UG/L								
7440-47-3	Chromium	MET-W	UG/L								
7440-48-4	Cobalt	MET-W	UG/L								
7440-50-8	Copper	MET-W	UG/L								
7439-89-6	Iron	MET-W	UG/L	41700		599		33100		23700	
7439-92-1	Lead	MET-W	UG/L								
7439-95-4	Magnesium	MET-W	UG/L								
7439-96-5	Manganese	MET-W	UG/L	19900		373		5520		2390	
7440-02-0	Nickel	MET-W	UG/L								
9/7/7440	Potassium	MET-W	UG/L								
7782-49-2	Selenium	MET-W	UG/L								
7440-22-4	Silver	MET-W	UG/L								
7440-23-5	Sodium	MET-W	UG/L								
7440-28-0	Thallium	MET-W	UG/L								
7440-62-2	Vanadium	MET-W	UG/L								
7440-66-6	Zinc	MET-W	UG/L								
4-MEE	**Methane, Ethane, Ethene**										
74-82-8	Methane	RSKSOP147	ug/l	18		2	U	22		2.7	
74-84-0	Ethane	RSKSOP147	ug/l	2	U	2	U	2	U	2	U
74-85-1	Ethene	RSKSOP147	ug/l	2	U	2	U	2	U	2	U
5-Wetchem	**Additional Parameters**										
7727-37-9	NITROGEN	MCAWW353-2	mg/L	0.05	U	0.05	U	0.05	U	0.05	U
NH3	NITROGEN, AMMONIA	MCAWW350-1	mg/L								
ALK	Alkalinity, Total (AS CaCO3)	SM2320	mg/L	220		78		120		71	
18496-25-8	SULFIDE	MCAWW376-1	mg/L	0.18		0.01	U	0.01	U	0.01	U
SO4	SULFATE	MCAWW375-	mg/L	210		1100		9.2		10	
FE	Ferrous Iron	HACH8146	mg/L								

Federal Creosote Superfund Site, OU3
Field Blank Data

Cas Rn	Chemical Name	Analytic Method	Sample Code Sample Name Sample Date Unit \\ Depth	FB-10172011-Y7 10/17/2011 to		FB-10182011-Y7 10/18/2011 to		FB-10192011-Y7 10/19/2011 to		FB-10202011-Y7 10/20/2011 to	
(Group Code)	**(Group Description)**										
1-GWMW-VOA	**Volatile Organic Compounds**										
75-71-8	Dichlorodifluoromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
74-87-3	Chloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-01-4	Vinyl Chloride	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
74-83-9	Bromomethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-00-3	Chloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-69-4	Trichlorofluoromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-35-4	1,1-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-15-0	Carbon Disulfide	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
67-64-1	Acetone	TVOA	ug/L	5	U	5	U	5	U	5	U
79-20-9	Methyl Acetate	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-09-2	Methylene Chloride	TVOA	ug/L	2		1.4		1.5		1.3	
156-60-5	trans-1,2-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
1634-04-4	Methyl Tert-Butyl Ether	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-34-3	1,1-Dichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
156-59-2	cis-1,2-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
78-93-3	2-Butanone	TVOA	ug/L	5	U	5	U	5	U	5	U
74-97-5	CHLOROBROMOMETHANE	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
67-66-3	Chloroform	TVOA	ug/L	0.8		0.52		0.52		0.43	J
71-55-6	1,1,1-Trichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
110-82-7	Cyclohexane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
56-23-5	Carbon Tetrachloride	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
71-43-2	Benzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
107-06-2	1,2-Dichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
79-01-6	Trichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
78-87-5	1,2-Dichloropropane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-27-4	Bromodichloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
10061-01-5	cis-1,3-Dichloropropene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
108-10-1	4-Methyl-2-pentanone	TVOA	ug/L	5	U	5	U	5	U	5	U
108-88-3	Toluene	TVOA	ug/L	0.98		1		1.1		1	
10061-02-6	Trans-1,3-Dichloropropene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
79-00-5	1,1,2-Trichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
127-18-4	Tetrachloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
108-87-2	Metylcyclohexane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
124-48-1	Dibromochloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
106-93-4	1,2-Dibromoethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
591-78-6	2-Hexanone	TVOA	ug/L	5	U	5	U	5	U	5	U

Cas Rn	Chemical Name	Analytic Method	Sample Code Sample Name Sample Date Unit \\ Depth	FB-10172011-Y7 10/17/2011 to		FB-10182011-Y7 10/18/2011 to		FB-10192011-Y7 10/19/2011 to		FB-10202011-Y7 10/20/2011 to	
108-90-7	Chlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
100-41-4	Ethylbenzene	TVOA	ug/L	0.13	J	0.17	J	0.17	J	0.15	J
179601-23-1	m,p-Xylene	TVOA	ug/L	0.49	J	0.61		0.65		0.56	
95-47-6	O-XYLENE	TVOA	ug/L	0.17	J	0.23	J	0.27	J	0.26	J
100-42-5	Styrene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-25-2	Bromoform	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
98-82-8	Isopropylbenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
541-73-1	1,3-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
106-46-7	1,4-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
95-50-1	1,2-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
96-12-8	1,2-Dibromo-3-chloropropane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
120-82-1	1,2,4-Trichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
87-61-6	1,2,3-TRICHLOROBENZENE	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
79-34-5	1,1,2,2-Tetrachloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
2-GWMW-SVOA	**Semi-Volatile Organic Compounds**										
100-52-7	Benzaldehyde	SVOA-LOW	ug/L	5	UJ	5	UJ	5	UJ	5	UJ
108-95-2	Phenol	SVOA-LOW	ug/L	5	UJ	5	UJ	5	UJ	5	UJ
111-44-4	bis(2-Chloroethyl)ether	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
95-57-8	2-Chlorophenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
95-48-7	2-Methylphenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
98-86-2	Acetophenone	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
106-44-5	4-Methylphenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
621-64-7	N-Nitroso-di-n-propylamine	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
67-72-1	Hexachloroethane	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
98-95-3	Nitrobenzene	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
78-59-1	Isophorone	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
88-75-5	2-Nitrophenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
105-67-9	2,4-Dimethylphenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
111-91-1	bis(2-Chloroethoxy)methane	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
120-83-2	2,4-Dichlorophenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
91-20-3	Naphthalene	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
106-47-8	4-Chloroaniline	SVOA-LOW	ug/L	5	U	5	UJ	5	U	5	UJ
87-68-3	Hexachlorobutadiene	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
105-60-2	Caprolactam	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
59-50-7	4-Chloro-3-methylphenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
91-57-6	2-Methylnaphthalene	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
95-94-3	1,2,4,5-TETRACHLOROBENZENE	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U

			Sample Code	FB-10172011-Y7		FB-10182011-Y7		FB-10192011-Y7		FB-10202011-Y7	
			Sample Name								
			Sample Date	10/17/2011		10/18/2011		10/19/2011		10/20/2011	
Cas Rn	Chemical Name	Analytic Method	Unit \\ Depth	to		to		to		to	
77-47-4	Hexachlorocyclopentadiene	SVOA-LOW	ug/L	5	U	5	UJ	5	U	5	UJ
88-06-2	2,4,6-Trichlorophenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
95-95-4	2,4,5-Trichlorophenol	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
92-52-4	1,1'Biphenyl	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
91-58-7	2-Chloronaphthalene	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
88-74-4	2-Nitroaniline	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
131-11-3	Dimethylphthalate	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
208-96-8	Acenaphthylene	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
606-20-2	2,6-Dinitrotoluene	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
99-09-2	3-Nitroaniline	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
83-32-9	Acenaphthene	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
51-28-5	2,4-Dinitrophenol	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
100-02-7	4-Nitrophenol	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
132-64-9	Dibenzofuran	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
121-14-2	2,4-Dinitrotoluene	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
86-73-7	Fluorene	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
84-66-2	Diethylphthalate	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
7005-72-3	4-Chlorophenyl-phenylether	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
100-01-6	4-Nitroaniline	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ	10	UJ
534-52-1	4,6-Dinitro-2-methylphenol	SVOA-LOW	ug/L	10	U	10	U	10	U	10	U
86-30-6	N-Nitrosodiphenylamine	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
101-55-3	4-Bromophenyl-phenylether	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
118-74-1	Hexachlorobenzene	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
1912-24-9	Atrazine	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
87-86-5	Pentachlorophenol	SVOA-LOW	ug/L	10	U	10	U	10	U	10	U
85-01-8	Phenanthrene	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
120-12-7	Anthracene	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
86-74-8	Carbazole	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
84-74-2	Di-n-butylphthalate	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
206-44-0	Fluoranthene	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
129-00-0	Pyrene	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
85-68-7	Butylbenzylphthalate	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
91-94-1	3,3'-Dichlorobenzidine	SVOA-LOW	ug/L	5	U	5	UJ	5	U	5	UJ
56-55-3	Benzo(a)anthracene	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
218-01-9	Chrysene	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
117-84-0	Di-n-octyl phthalate	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
205-99-2	Benzo(b)fluoranthene	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
207-08-9	Benzo(k)fluoranthene	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U

Cas Rn	Chemical Name	Analytic Method	Sample Code Sample Name Sample Date Unit \\ Depth	FB-10172011-Y7 10/17/2011 to		FB-10182011-Y7 10/18/2011 to		FB-10192011-Y7 10/19/2011 to		FB-10202011-Y7 10/20/2011 to	
50-32-8	Benzo(a)pyrene	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
53-70-3	Dibenz(a,h)anthracene	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
191-24-2	Benzo(g,h,i)perylene	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
58-90-2	CHLOROPHENOLS	SVOA-LOW	ug/L	5	U	5	U	5	U	5	U
3-MET-W	**Inorganic Analytes**										
7429-90-5	Aluminum	MET-W	UG/L								
7440-36-0	Antimony	MET-W	UG/L								
7440-38-2	Arsenic	MET-W	UG/L								
7440-39-3	Barium	MET-W	UG/L								
7440-41-7	Beryllium	MET-W	UG/L								
7440-43-9	Cadmium	MET-W	UG/L								
7440-70-2	Calcium	MET-W	UG/L								
7440-47-3	Chromium	MET-W	UG/L								
7440-48-4	Cobalt	MET-W	UG/L								
7440-50-8	Copper	MET-W	UG/L								
7439-89-6	Iron	MET-W	UG/L	100	U	100	U	100	U	100	U
7439-92-1	Lead	MET-W	UG/L								
7439-95-4	Magnesium	MET-W	UG/L								
7439-96-5	Manganese	MET-W	UG/L	15	U	15	U	15	U	15	U
7440-02-0	Nickel	MET-W	UG/L								
9/7/7440	Potassium	MET-W	UG/L								
7782-49-2	Selenium	MET-W	UG/L								
7440-22-4	Silver	MET-W	UG/L								
7440-23-5	Sodium	MET-W	UG/L								
7440-28-0	Thallium	MET-W	UG/L								
7440-62-2	Vanadium	MET-W	UG/L								
7440-66-6	Zinc	MET-W	UG/L								
4-MEE	**Methane, Ethane, Ethene**										
74-82-8	Methane	RSKSOP147	ug/l	2	U	2	U	2	U	2	U
74-84-0	Ethane	RSKSOP147	ug/l	2	U	2	U	2	U	2	U
74-85-1	Ethene	RSKSOP147	ug/l	2	U	2	U	2	U	2	U
5-Wetchem	**Additional Parameters**										
7727-37-9	NITROGEN	MCAWW353-2	mg/L								
NH3	NITROGEN, AMMONIA	MCAWW350-1	mg/L								
ALK	Alkalinity, Total (AS CaCO3)	SM2320	mg/L								

Federal Creosote Superfund Site, OU3
Field Blank Data

Cas Rn	Chemical Name	Analytic Method	Sample Code Sample Name Sample Date Unit \\ Depth	FB-10172011-Y7 10/17/2011 to		FB-10182011-Y7 10/18/2011 to		FB-10192011-Y7 10/19/2011 to		FB-10202011-Y7 10/20/2011 to	
18496-25-8	SULFIDE	MCAWW376-1	mg/L								
SO4	SULFATE	MCAWW375-	mg/L								
FE	Ferrous Iron	HACH8146	mg/L								

Cas Rn	Chemical Name	Analytic Method	Sample Code / Sample Name / Sample Date / Unit \\ Depth	FB-10212011-Y7 / 10/21/2011 to		FB-10242011-Y7 / 10/24/2011 to		FB-10252011-Y7 / 10/25/2011 to	
(Group Code)	**(Group Description)**								
1-GWMW-VOA	**Volatile Organic Compounds**								
75-71-8	Dichlorodifluoromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
74-87-3	Chloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
75-01-4	Vinyl Chloride	TVOA	ug/L	0.5	U	0.5	U	0.5	U
74-83-9	Bromomethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
75-00-3	Chloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
75-69-4	Trichlorofluoromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
75-35-4	1,1-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
75-15-0	Carbon Disulfide	TVOA	ug/L	0.5	U	0.5	U	0.5	U
67-64-1	Acetone	TVOA	ug/L	5	U	5	U	5	U
79-20-9	Methyl Acetate	TVOA	ug/L	0.5	U	0.5	U	0.5	U
75-09-2	Methylene Chloride	TVOA	ug/L	1.8		2.2		1.6	
156-60-5	trans-1,2-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U
1634-04-4	Methyl Tert-Butyl Ether	TVOA	ug/L	0.5	U	0.5	U	0.5	U
75-34-3	1,1-Dichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
156-59-2	cis-1,2-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U
78-93-3	2-Butanone	TVOA	ug/L	5	U	4.1	J	5	U
74-97-5	CHLOROBROMOMETHANE	TVOA	ug/L	0.5	U	0.5	U	0.5	U
67-66-3	Chloroform	TVOA	ug/L	0.72		0.86		0.62	
71-55-6	1,1,1-Trichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
110-82-7	Cyclohexane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
56-23-5	Carbon Tetrachloride	TVOA	ug/L	0.5	U	0.5	U	0.5	U
71-43-2	Benzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U
107-06-2	1,2-Dichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
79-01-6	Trichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U
78-87-5	1,2-Dichloropropane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
75-27-4	Bromodichloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
10061-01-5	cis-1,3-Dichloropropene	TVOA	ug/L	0.5	U	0.5	U	0.5	U
108-10-1	4-Methyl-2-pentanone	TVOA	ug/L	5	U	5	U	5	U
108-88-3	Toluene	TVOA	ug/L	1.1		1.1		0.72	
10061-02-6	Trans-1,3-Dichloropropene	TVOA	ug/L	0.5	U	0.5	U	0.5	U
79-00-5	1,1,2-Trichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
127-18-4	Tetrachloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U
108-87-2	Metylcyclohexane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
124-48-1	Dibromochloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
106-93-4	1,2-Dibromoethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
591-78-6	2-Hexanone	TVOA	ug/L	5	U	2.1	J	5	U

			Sample Code	FB-10212011-Y7		FB-10242011-Y7		FB-10252011-Y7	
			Sample Name						
			Sample Date	10/21/2011		10/24/2011		10/25/2011	
Cas Rn	Chemical Name	Analytic Method	Unit \\ Depth	to		to		to	
108-90-7	Chlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U
100-41-4	Ethylbenzene	TVOA	ug/L	0.16	J	0.15	J	0.1	J
179601-23-1	m,p-Xylene	TVOA	ug/L	0.54		0.49	J	0.37	J
95-47-6	O-XYLENE	TVOA	ug/L	0.26	J	0.27	J	0.2	J
100-42-5	Styrene	TVOA	ug/L	0.5	U	0.5	U	0.5	U
75-25-2	Bromoform	TVOA	ug/L	0.5	U	0.5	U	0.5	U
98-82-8	Isopropylbenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U
541-73-1	1,3-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U
106-46-7	1,4-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U
95-50-1	1,2-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U
96-12-8	1,2-Dibromo-3-chloropropane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
120-82-1	1,2,4-Trichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U
87-61-6	1,2,3-TRICHLOROBENZENE	TVOA	ug/L	0.5	U	0.5	U	0.5	U
79-34-5	1,1,2,2-Tetrachloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
2-GWMW-SVOA	**Semi-Volatile Organic Compounds**								
100-52-7	Benzaldehyde	SVOA-LOW	ug/L	5	UJ	5	UJ	5.2	UJ
108-95-2	Phenol	SVOA-LOW	ug/L	5	UJ	5	UJ	5.2	UJ
111-44-4	bis(2-Chloroethyl)ether	SVOA-LOW	ug/L	5	U	5	U	5.2	U
95-57-8	2-Chlorophenol	SVOA-LOW	ug/L	5	U	5	U	5.2	U
95-48-7	2-Methylphenol	SVOA-LOW	ug/L	5	U	5	U	5.2	U
108-60-1	2,2'-oxybis(1-Chloropropane)	SVOA-LOW	ug/L	5	U	5	U	5.2	U
98-86-2	Acetophenone	SVOA-LOW	ug/L	5	U	5	U	5.2	U
106-44-5	4-Methylphenol	SVOA-LOW	ug/L	5	U	5	U	5.2	U
621-64-7	N-Nitroso-di-n-propylamine	SVOA-LOW	ug/L	5	U	5	U	5.2	U
67-72-1	Hexachloroethane	SVOA-LOW	ug/L	5	U	5	U	5.2	U
98-95-3	Nitrobenzene	SVOA-LOW	ug/L	5	U	5	U	5.2	U
78-59-1	Isophorone	SVOA-LOW	ug/L	5	U	5	U	5.2	U
88-75-5	2-Nitrophenol	SVOA-LOW	ug/L	5	U	5	U	5.2	U
105-67-9	2,4-Dimethylphenol	SVOA-LOW	ug/L	5	U	5	U	5.2	U
111-91-1	bis(2-Chloroethoxy)methane	SVOA-LOW	ug/L	5	U	5	U	5.2	U
120-83-2	2,4-Dichlorophenol	SVOA-LOW	ug/L	5	U	5	U	5.2	U
91-20-3	Naphthalene	SVOA-LOW	ug/L	5	U	5	U	5.2	U
106-47-8	4-Chloroaniline	SVOA-LOW	ug/L	5	UJ	5	UJ	5.2	UJ
87-68-3	Hexachlorobutadiene	SVOA-LOW	ug/L	5	U	5	U	5.2	U
105-60-2	Caprolactam	SVOA-LOW	ug/L	5	U	5	U	5.2	U
59-50-7	4-Chloro-3-methylphenol	SVOA-LOW	ug/L	5	U	5	U	5.2	U
91-57-6	2-Methylnaphthalene	SVOA-LOW	ug/L	5	U	5	U	5.2	U
95-94-3	1,2,4,5-TETRACHLOROBENZENE	SVOA-LOW	ug/L	5	U	5	U	5.2	U

Federal Creosote Superfund Site, OU3
Field Blank Data

Cas Rn	Chemical Name	Analytic Method	Sample Code / Sample Name / Sample Date / Unit \\ Depth	FB-10212011-Y7 10/21/2011 to		FB-10242011-Y7 10/24/2011 to		FB-10252011-Y7 10/25/2011 to	
77-47-4	Hexachlorocyclopentadiene	SVOA-LOW	ug/L	5	UJ	5	UJ	5.2	UJ
88-06-2	2,4,6-Trichlorophenol	SVOA-LOW	ug/L	5	U	5	U	5.2	U
95-95-4	2,4,5-Trichlorophenol	SVOA-LOW	ug/L	5	U	5	U	5.2	U
92-52-4	1,1'Biphenyl	SVOA-LOW	ug/L	5	U	5	U	5.2	U
91-58-7	2-Chloronaphthalene	SVOA-LOW	ug/L	5	U	5	U	5.2	U
88-74-4	2-Nitroaniline	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ
131-11-3	Dimethylphthalate	SVOA-LOW	ug/L	5	U	5	U	5.2	U
208-96-8	Acenaphthylene	SVOA-LOW	ug/L	5	U	5	U	5.2	U
606-20-2	2,6-Dinitrotoluene	SVOA-LOW	ug/L	5	U	5	U	5.2	U
99-09-2	3-Nitroaniline	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ
83-32-9	Acenaphthene	SVOA-LOW	ug/L	5	U	5	U	5.2	U
51-28-5	2,4-Dinitrophenol	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ
100-02-7	4-Nitrophenol	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ
132-64-9	Dibenzofuran	SVOA-LOW	ug/L	5	U	5	U	5.2	U
121-14-2	2,4-Dinitrotoluene	SVOA-LOW	ug/L	5	U	5	U	5.2	U
86-73-7	Fluorene	SVOA-LOW	ug/L	5	U	5	U	5.2	U
84-66-2	Diethylphthalate	SVOA-LOW	ug/L	5	U	5	U	5.2	U
7005-72-3	4-Chlorophenyl-phenylether	SVOA-LOW	ug/L	5	U	5	U	5.2	U
100-01-6	4-Nitroaniline	SVOA-LOW	ug/L	10	UJ	10	UJ	10	UJ
534-52-1	4,6-Dinitro-2-methylphenol	SVOA-LOW	ug/L	10	U	10	U	10	U
86-30-6	N-Nitrosodiphenylamine	SVOA-LOW	ug/L	5	U	5	U	5.2	U
101-55-3	4-Bromophenyl-phenylether	SVOA-LOW	ug/L	5	U	5	U	5.2	U
118-74-1	Hexachlorobenzene	SVOA-LOW	ug/L	5	U	5	U	5.2	U
1912-24-9	Atrazine	SVOA-LOW	ug/L	5	U	5	U	5.2	U
87-86-5	Pentachlorophenol	SVOA-LOW	ug/L	10	U	10	U	10	U
85-01-8	Phenanthrene	SVOA-LOW	ug/L	5	U	5	U	5.2	U
120-12-7	Anthracene	SVOA-LOW	ug/L	5	U	5	U	5.2	U
86-74-8	Carbazole	SVOA-LOW	ug/L	5	U	5	U	5.2	U
84-74-2	Di-n-butylphthalate	SVOA-LOW	ug/L	5	U	5	U	5.2	U
206-44-0	Fluoranthene	SVOA-LOW	ug/L	5	U	5	U	5.2	U
129-00-0	Pyrene	SVOA-LOW	ug/L	5	U	5	U	5.2	U
85-68-7	Butylbenzylphthalate	SVOA-LOW	ug/L	5	U	5	U	5.2	U
91-94-1	3,3'-Dichlorobenzidine	SVOA-LOW	ug/L	5	UJ	5	UJ	5.2	UJ
56-55-3	Benzo(a)anthracene	SVOA-LOW	ug/L	5	U	5	U	5.2	U
218-01-9	Chrysene	SVOA-LOW	ug/L	5	U	5	U	5.2	U
117-81-7	bis(2-Ethylhexyl)phthalate	SVOA-LOW	ug/L	5	U	5	U	5.2	U
117-84-0	Di-n-octyl phthalate	SVOA-LOW	ug/L	5	U	5	U	5.2	U
205-99-2	Benzo(b)fluoranthene	SVOA-LOW	ug/L	5	U	5	U	5.2	U
207-08-9	Benzo(k)fluoranthene	SVOA-LOW	ug/L	5	U	5	U	5.2	U

Cas Rn	Chemical Name	Analytic Method	Sample Code Sample Name Sample Date Unit \\ Depth	FB-10212011-Y7 10/21/2011 to		FB-10242011-Y7 10/24/2011 to		FB-10252011-Y7 10/25/2011 to	
50-32-8	Benzo(a)pyrene	SVOA-LOW	ug/L	5	U	5	U	5.2	U
193-39-5	Indeno(1,2,3-cd)pyrene	SVOA-LOW	ug/L	5	U	5	U	5.2	U
53-70-3	Dibenz(a,h)anthracene	SVOA-LOW	ug/L	5	U	5	U	5.2	U
191-24-2	Benzo(g,h,i)perylene	SVOA-LOW	ug/L	5	U	5	U	5.2	U
58-90-2	CHLOROPHENOLS	SVOA-LOW	ug/L	5	U	5	U	5.2	U
3-MET-W	**Inorganic Analytes**								
7429-90-5	Aluminum	MET-W	UG/L						
7440-36-0	Antimony	MET-W	UG/L						
7440-38-2	Arsenic	MET-W	UG/L						
7440-39-3	Barium	MET-W	UG/L						
7440-41-7	Beryllium	MET-W	UG/L						
7440-43-9	Cadmium	MET-W	UG/L						
7440-70-2	Calcium	MET-W	UG/L						
7440-47-3	Chromium	MET-W	UG/L						
7440-48-4	Cobalt	MET-W	UG/L						
7440-50-8	Copper	MET-W	UG/L						
7439-89-6	Iron	MET-W	UG/L	100	U	100	U	100	U
7439-92-1	Lead	MET-W	UG/L						
7439-95-4	Magnesium	MET-W	UG/L						
7439-96-5	Manganese	MET-W	UG/L	15	U	15	U	15	U
7440-02-0	Nickel	MET-W	UG/L						
9/7/7440	Potassium	MET-W	UG/L						
7782-49-2	Selenium	MET-W	UG/L						
7440-22-4	Silver	MET-W	UG/L						
7440-23-5	Sodium	MET-W	UG/L						
7440-28-0	Thallium	MET-W	UG/L						
7440-62-2	Vanadium	MET-W	UG/L						
7440-66-6	Zinc	MET-W	UG/L						
4-MEE	**Methane, Ethane, Ethene**								
74-82-8	Methane	RSKSOP147	ug/l	2	U	2	U	2	U
74-84-0	Ethane	RSKSOP147	ug/l	2	U	2	U	2	U
74-85-1	Ethene	RSKSOP147	ug/l	2	U	2	U	2	U
5-Wetchem	**Additional Parameters**								
7727-37-9	NITROGEN	MCAWW353-2	mg/L						
NH3	NITROGEN, AMMONIA	MCAWW350-1	mg/L						
ALK	Alkalinity, Total (AS CaCO3)	SM2320	mg/L						

			Sample Code	FB-10212011-Y7		FB-10242011-Y7		FB-10252011-Y7	
			Sample Name						
			Sample Date	10/21/2011		10/24/2011		10/25/2011	
Cas Rn	Chemical Name	Analytic Method	Unit \\ Depth	to		to		to	
18496-25-8	SULFIDE	MCAWW376-1	mg/L						
SO4	SULFATE	MCAWW375-	mg/L						
FE	Ferrous Iron	HACH8146	mg/L						

Federal Creosote Superfund Site, OU3
Trip Blank Data

Cas Rn	Chemical Name	Analytic Method	Sample Code Sample Name Sample Date Unit \\ Depth	TB-10172011-Y7 10/17/2011 to		TB-10182011-Y7 10/18/2011 to		TB-10192011-Y7 10/19/2011 to		TB-10202011-Y7 10/20/2011 to	
(Group Code)	**(Group Description)**										
1-GWMW-VOA	**Volatile Organic Compounds**										
75-71-8	Dichlorodifluoromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
74-87-3	Chloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-01-4	Vinyl Chloride	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
74-83-9	Bromomethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-00-3	Chloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-69-4	Trichlorofluoromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-35-4	1,1-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	UJ	0.5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-15-0	Carbon Disulfide	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
67-64-1	Acetone	TVOA	ug/L	12		11		10		13	
79-20-9	Methyl Acetate	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-09-2	Methylene Chloride	TVOA	ug/L	0.98		0.87		0.9		1.1	
156-60-5	trans-1,2-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	UJ	0.5	U
1634-04-4	Methyl Tert-Butyl Ether	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-34-3	1,1-Dichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	UJ	0.5	U
156-59-2	cis-1,2-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	UJ	0.5	U
78-93-3	2-Butanone	TVOA	ug/L	5	J	5.5		5		5.8	
74-97-5	CHLOROBROMOMETHANE	TVOA	ug/L	0.5	U	0.5	U	0.5	UJ	0.5	U
67-66-3	Chloroform	TVOA	ug/L	0.49	J	0.43	J	0.37	J	0.5	
71-55-6	1,1,1-Trichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
110-82-7	Cyclohexane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
56-23-5	Carbon Tetrachloride	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
71-43-2	Benzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
107-06-2	1,2-Dichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
79-01-6	Trichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
78-87-5	1,2-Dichloropropane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-27-4	Bromodichloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
10061-01-5	cis-1,3-Dichloropropene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
108-10-1	4-Methyl-2-pentanone	TVOA	ug/L	5	U	5	U	5	U	5	U
108-88-3	Toluene	TVOA	ug/L	0.95		1.2		1.4		1.4	
10061-02-6	Trans-1,3-Dichloropropene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
79-00-5	1,1,2-Trichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
127-18-4	Tetrachloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
108-87-2	Metylcyclohexane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
124-48-1	Dibromochloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	UJ	0.5	U
106-93-4	1,2-Dibromoethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
591-78-6	2-Hexanone	TVOA	ug/L	5	U	5	U	5	U	5	U

			Sample Code	TB-10172011-Y7		TB-10182011-Y7		TB-10192011-Y7		TB-10202011-Y7	
			Sample Name								
			Sample Date	10/17/2011		10/18/2011		10/19/2011		10/20/2011	
Cas Rn	Chemical Name	Analytic Method	Unit \\ Depth	to		to		to		to	
108-90-7	Chlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
100-41-4	Ethylbenzene	TVOA	ug/L	0.13	J	0.19	J	0.22	J	0.21	J
179601-23-1	m,p-Xylene	TVOA	ug/L	0.52		0.77		0.85		0.86	
95-47-6	O-XYLENE	TVOA	ug/L	0.18	J	0.29	J	0.34	J	0.37	J
100-42-5	Styrene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
75-25-2	Bromoform	TVOA	ug/L	0.5	U	0.5	U	0.5	UJ	0.5	U
98-82-8	Isopropylbenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
541-73-1	1,3-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
106-46-7	1,4-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
95-50-1	1,2-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
96-12-8	1,2-Dibromo-3-chloropropane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
120-82-1	1,2,4-Trichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
87-61-6	1,2,3-TRICHLOROBENZENE	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
79-34-5	1,1,2,2-Tetrachloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
2-GWMW-SVOA	**Semi-Volatile Organic Compounds**										
100-52-7	Benzaldehyde	SVOA-LOW	ug/L								
108-95-2	Phenol	SVOA-LOW	ug/L								
111-44-4	bis(2-Chloroethyl)ether	SVOA-LOW	ug/L								
95-57-8	2-Chlorophenol	SVOA-LOW	ug/L								
95-48-7	2-Methylphenol	SVOA-LOW	ug/L								
108-60-1	2,2'-oxybis(1-Chloropropane)	SVOA-LOW	ug/L								
98-86-2	Acetophenone	SVOA-LOW	ug/L								
106-44-5	4-Methylphenol	SVOA-LOW	ug/L								
621-64-7	N-Nitroso-di-n-propylamine	SVOA-LOW	ug/L								
67-72-1	Hexachloroethane	SVOA-LOW	ug/L								
98-95-3	Nitrobenzene	SVOA-LOW	ug/L								
78-59-1	Isophorone	SVOA-LOW	ug/L								
88-75-5	2-Nitrophenol	SVOA-LOW	ug/L								
105-67-9	2,4-Dimethylphenol	SVOA-LOW	ug/L								
111-91-1	bis(2-Chloroethoxy)methane	SVOA-LOW	ug/L								
120-83-2	2,4-Dichlorophenol	SVOA-LOW	ug/L								
91-20-3	Naphthalene	SVOA-LOW	ug/L								
106-47-8	4-Chloroaniline	SVOA-LOW	ug/L								
87-68-3	Hexachlorobutadiene	SVOA-LOW	ug/L								
105-60-2	Caprolactam	SVOA-LOW	ug/L								
59-50-7	4-Chloro-3-methylphenol	SVOA-LOW	ug/L								
91-57-6	2-Methylnaphthalene	SVOA-LOW	ug/L								
95-94-3	1,2,4,5-TETRACHLOROBENZENE	SVOA-LOW	ug/L								

Federal Creosote Superfund Site, OU3
Trip Blank Data

			Sample Code	TB-10172011-Y7		TB-10182011-Y7		TB-10192011-Y7		TB-10202011-Y7	
			Sample Name								
			Sample Date	10/17/2011		10/18/2011		10/19/2011		10/20/2011	
Cas Rn	Chemical Name	Analytic Method	Unit \\ Depth	to		to		to		to	
77-47-4	Hexachlorocyclopentadiene	SVOA-LOW	ug/L								
88-06-2	2,4,6-Trichlorophenol	SVOA-LOW	ug/L								
95-95-4	2,4,5-Trichlorophenol	SVOA-LOW	ug/L								
92-52-4	1,1'Biphenyl	SVOA-LOW	ug/L								
91-58-7	2-Chloronaphthalene	SVOA-LOW	ug/L								
88-74-4	2-Nitroaniline	SVOA-LOW	ug/L								
131-11-3	Dimethylphthalate	SVOA-LOW	ug/L								
208-96-8	Acenaphthylene	SVOA-LOW	ug/L								
606-20-2	2,6-Dinitrotoluene	SVOA-LOW	ug/L								
99-09-2	3-Nitroaniline	SVOA-LOW	ug/L								
83-32-9	Acenaphthene	SVOA-LOW	ug/L								
51-28-5	2,4-Dinitrophenol	SVOA-LOW	ug/L								
100-02-7	4-Nitrophenol	SVOA-LOW	ug/L								
132-64-9	Dibenzofuran	SVOA-LOW	ug/L								
121-14-2	2,4-Dinitrotoluene	SVOA-LOW	ug/L								
86-73-7	Fluorene	SVOA-LOW	ug/L								
84-66-2	Diethylphthalate	SVOA-LOW	ug/L								
7005-72-3	4-Chlorophenyl-phenylether	SVOA-LOW	ug/L								
100-01-6	4-Nitroaniline	SVOA-LOW	ug/L								
534-52-1	4,6-Dinitro-2-methylphenol	SVOA-LOW	ug/L								
86-30-6	N-Nitrosodiphenylamine	SVOA-LOW	ug/L								
101-55-3	4-Bromophenyl-phenylether	SVOA-LOW	ug/L								
118-74-1	Hexachlorobenzene	SVOA-LOW	ug/L								
1912-24-9	Atrazine	SVOA-LOW	ug/L								
87-86-5	Pentachlorophenol	SVOA-LOW	ug/L								
85-01-8	Phenanthrene	SVOA-LOW	ug/L								
120-12-7	Anthracene	SVOA-LOW	ug/L								
86-74-8	Carbazole	SVOA-LOW	ug/L								
84-74-2	Di-n-butylphthalate	SVOA-LOW	ug/L								
206-44-0	Fluoranthene	SVOA-LOW	ug/L								
129-00-0	Pyrene	SVOA-LOW	ug/L								
85-68-7	Butylbenzylphthalate	SVOA-LOW	ug/L								
91-94-1	3,3'-Dichlorobenzidine	SVOA-LOW	ug/L								
56-55-3	Benzo(a)anthracene	SVOA-LOW	ug/L								
218-01-9	Chrysene	SVOA-LOW	ug/L								
117-81-7	bis(2-Ethylhexyl)phthalate	SVOA-LOW	ug/L								
117-84-0	Di-n-octyl phthalate	SVOA-LOW	ug/L								
205-99-2	Benzo(b)fluoranthene	SVOA-LOW	ug/L								
207-08-9	Benzo(k)fluoranthene	SVOA-LOW	ug/L								

Federal Creosote Superfund Site, OU3
Trip Blank Data

Cas Rn	Chemical Name	Analytic Method	Sample Code Sample Name Sample Date Unit \\ Depth	TB-10172011-Y7 10/17/2011 to		TB-10182011-Y7 10/18/2011 to		TB-10192011-Y7 10/19/2011 to		TB-10202011-Y7 10/20/2011 to	
50-32-8	Benzo(a)pyrene	SVOA-LOW	ug/L								
193-39-5	Indeno(1,2,3-cd)pyrene	SVOA-LOW	ug/L								
53-70-3	Dibenz(a,h)anthracene	SVOA-LOW	ug/L								
191-24-2	Benzo(g,h,i)perylene	SVOA-LOW	ug/L								
58-90-2	CHLOROPHENOLS	SVOA-LOW	ug/L								
3-MET-W	**Inorganic Analytes**										
7429-90-5	Aluminum	MET-W	UG/L								
7440-36-0	Antimony	MET-W	UG/L								
7440-38-2	Arsenic	MET-W	UG/L								
7440-39-3	Barium	MET-W	UG/L								
7440-41-7	Beryllium	MET-W	UG/L								
7440-43-9	Cadmium	MET-W	UG/L								
7440-70-2	Calcium	MET-W	UG/L								
7440-47-3	Chromium	MET-W	UG/L								
7440-48-4	Cobalt	MET-W	UG/L								
7440-50-8	Copper	MET-W	UG/L								
7439-89-6	Iron	MET-W	UG/L								
7439-92-1	Lead	MET-W	UG/L								
7439-95-4	Magnesium	MET-W	UG/L								
7439-96-5	Manganese	MET-W	UG/L								
7440-02-0	Nickel	MET-W	UG/L								
9/7/7440	Potassium	MET-W	UG/L								
7782-49-2	Selenium	MET-W	UG/L								
7440-22-4	Silver	MET-W	UG/L								
7440-23-5	Sodium	MET-W	UG/L								
7440-28-0	Thallium	MET-W	UG/L								
7440-62-2	Vanadium	MET-W	UG/L								
7440-66-6	Zinc	MET-W	UG/L								
4-MEE	**Methane, Ethane, Ethene**										
74-82-8	Methane	RSKSOP147	ug/l	2	U	2	U	2	U	2	U
74-84-0	Ethane	RSKSOP147	ug/l	2	U	2	U	2	U	2	U
74-85-1	Ethene	RSKSOP147	ug/l	2	U	2	U	2	U	2	U
5-Wetchem	**Additional Parameters**										
7727-37-9	NITROGEN	MCAWW353-2	mg/L								
NH3	NITROGEN, AMMONIA	MCAWW350-1	mg/L								
ALK	Alkalinity, Total (AS CaCO3)	SM2320	mg/L								
18496-25-8	SULFIDE	MCAWW376-1	mg/L								
SO4	SULFATE	MCAWW375-	mg/L								
FE	Ferrous Iron	HACH8146	mg/L								

Federal Creosote Superfund Site, OU3
Trip Blank Data

Cas Rn	Chemical Name	Analytic Method	Sample Code Sample Name Sample Date Unit \\ Depth	TB-10212011-Y7 10/21/2011 to		TB-10242011-Y7 10/24/2011 to		TB-10252011-Y7 10/25/2011 to	
(Group Code)	**(Group Description)**								
1-GWMW-VOA	**Volatile Organic Compounds**								
75-71-8	Dichlorodifluoromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
74-87-3	Chloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
75-01-4	Vinyl Chloride	TVOA	ug/L	0.5	U	0.5	U	0.5	U
74-83-9	Bromomethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
75-00-3	Chloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
75-69-4	Trichlorofluoromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
75-35-4	1,1-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
75-15-0	Carbon Disulfide	TVOA	ug/L	0.47	J	0.5	U	0.5	U
67-64-1	Acetone	TVOA	ug/L	16		12		13	
79-20-9	Methyl Acetate	TVOA	ug/L	0.5	U	0.5	U	0.5	U
75-09-2	Methylene Chloride	TVOA	ug/L	0.97		0.96		1.1	
156-60-5	trans-1,2-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U
1634-04-4	Methyl Tert-Butyl Ether	TVOA	ug/L	0.5	U	0.5	U	0.5	U
75-34-3	1,1-Dichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
156-59-2	cis-1,2-Dichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U
78-93-3	2-Butanone	TVOA	ug/L	6.8		7.9		5	U
74-97-5	CHLOROBROMOMETHANE	TVOA	ug/L	0.5	U	0.5	U	0.5	U
67-66-3	Chloroform	TVOA	ug/L	0.46	J	0.42	J	0.51	
71-55-6	1,1,1-Trichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
110-82-7	Cyclohexane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
56-23-5	Carbon Tetrachloride	TVOA	ug/L	0.5	U	0.5	U	0.5	U
71-43-2	Benzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U
107-06-2	1,2-Dichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
79-01-6	Trichloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U
78-87-5	1,2-Dichloropropane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
75-27-4	Bromodichloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
10061-01-5	cis-1,3-Dichloropropene	TVOA	ug/L	0.5	U	0.5	U	0.5	U
108-10-1	4-Methyl-2-pentanone	TVOA	ug/L	5	U	5	U	5	U
108-88-3	Toluene	TVOA	ug/L	1.1		0.85		0.89	
10061-02-6	Trans-1,3-Dichloropropene	TVOA	ug/L	0.5	U	0.5	U	0.5	U
79-00-5	1,1,2-Trichloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
127-18-4	Tetrachloroethene	TVOA	ug/L	0.5	U	0.5	U	0.5	U
108-87-2	Metylcyclohexane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
124-48-1	Dibromochloromethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
106-93-4	1,2-Dibromoethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
591-78-6	2-Hexanone	TVOA	ug/L	5	U	1.2	J	5	U

			Sample Code	TB-10212011-Y7		TB-10242011-Y7		TB-10252011-Y7	
			Sample Name						
			Sample Date	10/21/2011		10/24/2011		10/25/2011	
Cas Rn	Chemical Name	Analytic Method	Unit \\ Depth	to		to		to	
108-90-7	Chlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U
100-41-4	Ethylbenzene	TVOA	ug/L	0.16	J	0.12	J	0.12	J
179601-23-1	m,p-Xylene	TVOA	ug/L	0.53		0.43	J	0.46	J
95-47-6	O-XYLENE	TVOA	ug/L	0.28	J	0.26	J	0.26	J
100-42-5	Styrene	TVOA	ug/L	0.5	U	0.5	U	0.5	U
75-25-2	Bromoform	TVOA	ug/L	0.5	U	0.5	U	0.5	U
98-82-8	Isopropylbenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U
541-73-1	1,3-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U
106-46-7	1,4-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U
95-50-1	1,2-Dichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U
96-12-8	1,2-Dibromo-3-chloropropane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
120-82-1	1,2,4-Trichlorobenzene	TVOA	ug/L	0.5	U	0.5	U	0.5	U
87-61-6	1,2,3-TRICHLOROBENZENE	TVOA	ug/L	0.5	U	0.5	U	0.5	U
79-34-5	1,1,2,2-Tetrachloroethane	TVOA	ug/L	0.5	U	0.5	U	0.5	U
2-GWMW-SVOA	**Semi-Volatile Organic Compounds**								
100-52-7	Benzaldehyde	SVOA-LOW	ug/L						
108-95-2	Phenol	SVOA-LOW	ug/L						
111-44-4	bis(2-Chloroethyl)ether	SVOA-LOW	ug/L						
95-57-8	2-Chlorophenol	SVOA-LOW	ug/L						
95-48-7	2-Methylphenol	SVOA-LOW	ug/L						
108-60-1	2,2'-oxybis(1-Chloropropane)	SVOA-LOW	ug/L						
98-86-2	Acetophenone	SVOA-LOW	ug/L						
106-44-5	4-Methylphenol	SVOA-LOW	ug/L						
621-64-7	N-Nitroso-di-n-propylamine	SVOA-LOW	ug/L						
67-72-1	Hexachloroethane	SVOA-LOW	ug/L						
98-95-3	Nitrobenzene	SVOA-LOW	ug/L						
78-59-1	Isophorone	SVOA-LOW	ug/L						
88-75-5	2-Nitrophenol	SVOA-LOW	ug/L						
105-67-9	2,4-Dimethylphenol	SVOA-LOW	ug/L						
111-91-1	bis(2-Chloroethoxy)methane	SVOA-LOW	ug/L						
120-83-2	2,4-Dichlorophenol	SVOA-LOW	ug/L						
91-20-3	Naphthalene	SVOA-LOW	ug/L						
106-47-8	4-Chloroaniline	SVOA-LOW	ug/L						
87-68-3	Hexachlorobutadiene	SVOA-LOW	ug/L						
105-60-2	Caprolactam	SVOA-LOW	ug/L						
59-50-7	4-Chloro-3-methylphenol	SVOA-LOW	ug/L						
91-57-6	2-Methylnaphthalene	SVOA-LOW	ug/L						
95-94-3	1,2,4,5-TETRACHLOROBENZENE	SVOA-LOW	ug/L						

Cas Rn	Chemical Name	Analytic Method	Sample Code Sample Name Sample Date Unit \\ Depth	TB-10212011-Y7 10/21/2011 to		TB-10242011-Y7 10/24/2011 to		TB-10252011-Y7 10/25/2011 to	
77-47-4	Hexachlorocyclopentadiene	SVOA-LOW	ug/L						
88-06-2	2,4,6-Trichlorophenol	SVOA-LOW	ug/L						
95-95-4	2,4,5-Trichlorophenol	SVOA-LOW	ug/L						
92-52-4	1,1'Biphenyl	SVOA-LOW	ug/L						
91-58-7	2-Chloronaphthalene	SVOA-LOW	ug/L						
88-74-4	2-Nitroaniline	SVOA-LOW	ug/L						
131-11-3	Dimethylphthalate	SVOA-LOW	ug/L						
208-96-8	Acenaphthylene	SVOA-LOW	ug/L						
606-20-2	2,6-Dinitrotoluene	SVOA-LOW	ug/L						
99-09-2	3-Nitroaniline	SVOA-LOW	ug/L						
83-32-9	Acenaphthene	SVOA-LOW	ug/L						
51-28-5	2,4-Dinitrophenol	SVOA-LOW	ug/L						
100-02-7	4-Nitrophenol	SVOA-LOW	ug/L						
132-64-9	Dibenzofuran	SVOA-LOW	ug/L						
121-14-2	2,4-Dinitrotoluene	SVOA-LOW	ug/L						
86-73-7	Fluorene	SVOA-LOW	ug/L						
84-66-2	Diethylphthalate	SVOA-LOW	ug/L						
7005-72-3	4-Chlorophenyl-phenylether	SVOA-LOW	ug/L						
100-01-6	4-Nitroaniline	SVOA-LOW	ug/L						
534-52-1	4,6-Dinitro-2-methylphenol	SVOA-LOW	ug/L						
86-30-6	N-Nitrosodiphenylamine	SVOA-LOW	ug/L						
101-55-3	4-Bromophenyl-phenylether	SVOA-LOW	ug/L						
118-74-1	Hexachlorobenzene	SVOA-LOW	ug/L						
1912-24-9	Atrazine	SVOA-LOW	ug/L						
87-86-5	Pentachlorophenol	SVOA-LOW	ug/L						
85-01-8	Phenanthrene	SVOA-LOW	ug/L						
120-12-7	Anthracene	SVOA-LOW	ug/L						
86-74-8	Carbazole	SVOA-LOW	ug/L						
84-74-2	Di-n-butylphthalate	SVOA-LOW	ug/L						
206-44-0	Fluoranthene	SVOA-LOW	ug/L						
129-00-0	Pyrene	SVOA-LOW	ug/L						
85-68-7	Butylbenzylphthalate	SVOA-LOW	ug/L						
91-94-1	3,3'-Dichlorobenzidine	SVOA-LOW	ug/L						
56-55-3	Benzo(a)anthracene	SVOA-LOW	ug/L						
218-01-9	Chrysene	SVOA-LOW	ug/L						
117-81-7	bis(2-Ethylhexyl)phthalate	SVOA-LOW	ug/L						
117-84-0	Di-n-octyl phthalate	SVOA-LOW	ug/L						
205-99-2	Benzo(b)fluoranthene	SVOA-LOW	ug/L						
207-08-9	Benzo(k)fluoranthene	SVOA-LOW	ug/L						

Cas Rn	Chemical Name	Analytic Method	Sample Code / Sample Name / Sample Date / Unit \\ Depth	TB-10212011-Y7 10/21/2011 to		TB-10242011-Y7 10/24/2011 to		TB-10252011-Y7 10/25/2011 to	
50-32-8	Benzo(a)pyrene	SVOA-LOW	ug/L						
193-39-5	Indeno(1,2,3-cd)pyrene	SVOA-LOW	ug/L						
53-70-3	Dibenz(a,h)anthracene	SVOA-LOW	ug/L						
191-24-2	Benzo(g,h,i)perylene	SVOA-LOW	ug/L						
58-90-2	CHLOROPHENOLS	SVOA-LOW	ug/L						
3-MET-W	**Inorganic Analytes**								
7429-90-5	Aluminum	MET-W	UG/L						
7440-36-0	Antimony	MET-W	UG/L						
7440-38-2	Arsenic	MET-W	UG/L						
7440-39-3	Barium	MET-W	UG/L						
7440-41-7	Beryllium	MET-W	UG/L						
7440-43-9	Cadmium	MET-W	UG/L						
7440-70-2	Calcium	MET-W	UG/L						
7440-47-3	Chromium	MET-W	UG/L						
7440-48-4	Cobalt	MET-W	UG/L						
7440-50-8	Copper	MET-W	UG/L						
7439-89-6	Iron	MET-W	UG/L						
7439-92-1	Lead	MET-W	UG/L						
7439-95-4	Magnesium	MET-W	UG/L						
7439-96-5	Manganese	MET-W	UG/L						
7440-02-0	Nickel	MET-W	UG/L						
9/7/7440	Potassium	MET-W	UG/L						
7782-49-2	Selenium	MET-W	UG/L						
7440-22-4	Silver	MET-W	UG/L						
7440-23-5	Sodium	MET-W	UG/L						
7440-28-0	Thallium	MET-W	UG/L						
7440-62-2	Vanadium	MET-W	UG/L						
7440-66-6	Zinc	MET-W	UG/L						
4-MEE	**Methane, Ethane, Ethene**								
74-82-8	Methane	RSKSOP147	ug/l	2	U	2	U	2	U
74-84-0	Ethane	RSKSOP147	ug/l	2	U	2	U	2	U
74-85-1	Ethene	RSKSOP147	ug/l	2	U	2	U	2	U
5-Wetchem	**Additional Parameters**								
7727-37-9	NITROGEN	MCAWW353-2	mg/L						
NH3	NITROGEN, AMMONIA	MCAWW350-1	mg/L						
ALK	Alkalinity, Total (AS CaCO3)	SM2320	mg/L						
18496-25-8	SULFIDE	MCAWW376-1	mg/L						
SO4	SULFATE	MCAWW375-	mg/L						
FE	Ferrous Iron	HACH8146	mg/L						